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THE ÆSCULAPIAN

Vol. 1

December, 1908

No. 1

LUKE, THE PHYSICIAN (HARNACK), WITH REMARKS ON THE LITERARY, DRAMATIC AND MEDICAL QUALITY OF THE THIRD GOSPEL, AND THE ACTS.*

BY GEORGE HOMAN, M. D.,

St. Louis, Mo.

BEFORE taking up the topics mentioned in the program for this meeting I wish to state that my attention was drawn to the English translation of Professor A. Harnack's *Luke the Physician*, by a notice of it seen in a medical journal, and I ordered a copy in the hope and belief that perhaps some new facts or information had been disclosed throwing light on the personal character and professional career of Luke, the medical practitioner; something, in short, of a biography that would supplement the sparse showings of tale and tradition in respect of this remarkable man—who was the only Greek among the evangelists and apostles of the early Christian church and, as Harnack states, of marked superiority to all of the others in point of letters and science. And to this may be added what Professor Harnack does not point out, namely, that joined to his merit as a most gifted story-teller, he possessed in high degree the artistic taste, the marvelous dramatic instinct of his fellow-countrymen at their best, which faculty reached its highest form and most perfect expression among the Greeks, and was used by them with telling fitness and effect.

Instead, however, of such a sketch of life and character as was hoped for, the book was found to be a critical examination and technical exegesis of all the evidence and circumstances, direct and collateral, which tended to show that Luke was a member of the medical profession, the findings of the author

*Read before the St. Louis Medical History Club, March 26, 1908.

being wholly in support of the view that he was indeed a physician skilled in practise, and thoroughly versed in all the medical knowledge of his time.

For the purposes of this evening the doctrine of the divinely inspired letter of the Third Gospel and The Acts will be disregarded, and the literary, dramatic and medical quality of these writings will be considered, very briefly and imperfectly it is true, in contrast and comparison with work of somewhat like character that has withstood the test of time and criticism.

And it may be remarked here that as English-speaking peoples generally know best the writings of Luke, and other Biblical authors, through what is commonly spoken of as the King James version, it was a most fortunate circumstance that that translation was given its literary dress when the English tongue was at its prime in strength, beauty, purity and meaning, and the comparison before mentioned will be made with a few passages from the works known under the name of Shakespeare which appeared at about the same period as the version mentioned.

As an exponent of the wonderful Greek mind, Luke, as judged by his written works, must hold an exalted rank even among the intellectual luminaries which his race and age produced, and while very few precise details of his life are known, it fully appears that he was of Greek parentage and a native of Antioch, Syria. I quote from Harnack (p. 147), as follows:

"He had at his command an average education, and possessed a more than ordinary literary talent. His medical profession seems to have led him to Christianity, for he embraced that religion in the conviction that by its means and by quite new methods he would be enabled to heal diseases and drive out evil spirits, and above all to become an effectual physician of the soul. Directed by his very calling to the weak and wretched, his philanthropic sympathy with the miserable was deepened in that he accepted the religion of Christ and as a physician and evangelist proved and proclaimed the power and efficacy of the name of Jesus and of the Gospel."

Paul's remark (2 Tim., IV, 11), "Only Luke is with me" is cited and Harnack adds (p. 148):

"That is the last we hear of him. But we know from his works that he survived the destruction of Jerusalem, and was still at work a good time afterwards. We cannot discover with certainty where he went after leaving Rome."

There is deep pathos in the above words of Paul and they throw a clear light on the characters of the two men.

It will be remembered that when Paul at Cesarea appealed from Festus unto Cæsar (Acts XXV, 11), he was sent thence under guard to Rome. His health was so infirm that Luke went with him as his physician, and he was with him to the end.

After several years' sojourn there, and following a second trial, the decree of Nero condemned Paul to death (by crucifixion, as church tradition says), this edict having probably been hastened by seeming proofs that the Christian sect had a guilty part in the burning of Rome—and for other reasons quite apart from their religious belief.

Knowing his doom Paul wrote to Timothy a moving entreaty for human help and sympathy, saying the time of his departure was at hand, that he had fought a good fight, had finished his course, had kept the faith. He claimed for his work the Divine sanction and favor, and a reward in a crown of righteousness laid up for him at the last day, but this did not comfort him and it is followed by the very human cry, "Do thy diligence to come shortly unto me," and telling how he had been forsaken by all but Luke.

That his physician alone should have stood by him in his dire extremity is not singular in the record of our profession, and tends to establish the medical character of Luke; and it may well be that Luke's life was spared by reason of his calling, and in consequence of the esteem in which he was held by the Roman power through his high attainments, and steadfastness thus shown in the discharge of his duties as a physician.

In speaking of the influence and work of Luke in bringing together the writings which later became the canonical Scriptures, Professor Harnack says (p. 163):

"Under his hands the universalistic and humane, the social and individualistic tendencies of Hellenism, the ecstatic and magical elements of Greek religion, yet also Greek thought and sense of form, gain the mastery over the subject-matter of the traditional narratives."

Permit me to digress for a moment from the straight line of historic comment to remark that in my youth, along with very many others, no doubt, I was made to search the Scriptures unwillingly, the subject of such enforced study being usually the New Testament, and I noted in those days that I had less difficulty with the writings of St. Luke than any of the others, they came more easily and seemed to appeal with more feeling. I never thought of an explanation of this fact until it was made clear by Professor Harnack's statement as to Luke's superior

literary skill, his ease and charm as a narrator, and I would add as my own impression, the dramatic pith and power of his style.

As examples of his wondrous aptness as a writer and the poetic richness of his imagery the rhapsody of Mary, and the prophesyings of Zacharias (Luke I), known ecclesiastically as the Magnificat and the Benedictus, offer signal testimony on this point.

Perhaps the most striking example of his combined literary and dramatic genius occurs in the next chapter touching the event at Bethlehem, for it is to be presumed as a lettered man that Luke knew of the Jewish aspirations and the hopes entertained of a Messiah as foreshown more or less clearly by the Hebrew prophets; and, fired with the zeal of a new form of religious faith, his vivid imagination saw and seized the opportunity and with master-hand and thought he alone of all the disciples, evangelists and apostles set the stage for that surpassing scene out of which the institution of Christmas has grown, and in which the world-wide children's holiday had its beginnings.

The beneficence to child-life in all the later centuries flowing from the genius of this one man through creative sense, form, insight, and skill is immeasurable, and testifies to the power of a single act to change the currents of life and influence for all time the face of human affairs.

Observe with what marvelous skill, sublime simplicity and true dramatic understanding the transcendent spectacle is presented by him:

"And there were in the same country shepherds abiding in the field, keeping watch over their flock by night."

Following closely on this setting comes the herald angel making announcement of good tidings of great joy which shall be to all people, whereupon the stupendous scene unrolls with the firmament of heaven as a background:

"And suddenly there was with the angel, a multitude of the heavenly host praising God, and saying, Glory to God in the highest, and on earth peace, good-will toward men."

In extreme contrast to this picture, supernal in character, the dream of Clarence is offered, infernal in its character, as found in King Richard III, Act I, Scene IV:

"Methought I saw a thousand fearful wrecks;
 A thousand men that fishes gnawed upon;
 Wedges of gold, great anchors, heaps of pearl,
 Inestimable stones, unvalued jewels,
 All scattered in the bottom of the sea.
 Some lay in dead men's skulls; and in those holes
 Where eyes did once inhabit, there were crept
 (As 'twere in scorn of eyes) reflecting gems,
 That wooed the slimy bottom of the deep,
 And mocked the dead bones that lay scattered by.
 . . . Often did I strive to yield the ghost;
 But still the envious flood kept in my soul,
 And would not let it forth . . .
 O, no, my dream was lengthened after life;
 O, then began the tempest to my soul!
 I passed, methought, the melancholy flood,
 . . . Unto the Kingdom of perpetual night.
 . . . Then came wandering by
 A shadow like an angel, with bright hair
 Dabbled in blood, and he shrieked out aloud—
 . . . *Seize on him, furies, take him to your torments;*
 With that, methought a legion of foul fiends
 Environed me, and howled in mine ears
 Such hideous cries, that, with the very noise
 I trembling waked, and for a season after,
 Could not believe but that I was in hell!"

The dramatic analogue of the foregoing treating of a similar theme may be found in Luke (ch. XVI) in the story of Dives:

"And in hell he lifted up his eyes, being in torments . . .
 and he cried . . . have mercy on me, and send Lazarus, that he
 may dip the tip of his finger in water and cool my tongue; for I am
 tormented in this flame. . . . I pray thee therefore that thou
 wouldst send him to my father's house; for I have five brethren; that
 he may testify unto them, lest they also come into this place of torment
 . . . but if one went unto them from the dead, they will re-
 pent."

The more modern dramatist will again be presented briefly to show his manner of handling a celestial theme somewhat akin to the one painted by the medical evangelist. It is Queen Katherine's vision as found in King Henry VIII, Act IV, Scene II. Anyone who has witnessed this scene adequately staged and rendered cannot forget the impressive sublimity of the spectacle:

"Spirits of peace, where are ye? Are ye all gone?
 And leave me here in wretchedness behind ye?
 Saw ye none enter, since I slept?
 No? Saw ye not, even now, a blessed troop
 Invite me to a banquet; whose bright faces

Cast thousand beams upon me, like the sun?
 They promised me eternal happiness:
 And brought me garlands which I feel
 I am not worthy yet to wear; I shall, assuredly."

Comment is hardly needed as these contrasts and comparisons bear ample witness to the genius of this many-sided Greek physician.

Harnack speaks of Luke (p. 163) as "this Greek enthusiast for Christ," and adds:

"He amply compensates us for his faith in magic, his enormous credulity and theological superficiality, by his own peculiar quality of confident happy hopefulness and his genuine Greek delight in telling stories."

He points to the fact that the four evangelists all mention the incident in connection with the seizure of Christ, that Peter struck off the ear of Malchus, but only Luke asserts that the ear was restored and the wound healed by the miraculous act of Christ—intimating at the same time that if Luke thought a miracle was needed at any time to confirm the verity of the new religion it would be forthcoming on occasion.

In view of this temperamental attitude it may be true that the story of the nativity, as conceived and told by him alone, grew out of the ardent Greek imagination, and in fact had a basis no more solid than the fairy stories of Hans Christian Andersen; but this should not lessen the priceless value of his work which has been and will be treasured so long as it shall continue to appeal to the primary feelings, the fundamental emotions of mind and soul common to the human race all over the world.

In studying the medical side of Luke, the elements of character just mentioned, together with his bias as a zealous adherent of the new faith cannot be lost sight of, for when the operation of what is known as natural law, working every day in recognized harmony and order, is arrested, the stage is cleared for magic and wonder-working which may either buttress the faith of those who would believe, or challenge the scruple and criticism of the unbeliever.

Speaking of the evidence tending to show that Luke was a physician, Professor Harnack observes that

"in those days Greeks with religious interests were disposed to regard religion mainly under the category of Healing and Salvation." and then adds:

"A combination of characteristic signs will compel us to believe that the author was a physician, if the description of the particular cases of disease show distinct traces of medical diagnosis and scientific knowledge;

if the language, even where questions of medicine or of healing are not touched upon, is colored by medical phraseology, and if those passages where the author speaks as an eye-witness medical traits are especially and prominently apparent. *These three kinds of tokens are also found in the historical work of our author.* It is accordingly proved that it proceeds from the pen of a physician."

The medical miracles mentioned in the third Gospel and the Acts are taken up and critically examined with reference to the style and manner of expression used in their description—the technical terms, medical words and forms, and professional designations being carefully tested and exhaustively considered under the above rules with the result of an unhesitating affirmation of the authorship of the books in question by a writer of high scientific attainments, and evident familiarity with the best medical works of his own and former times.

The miracles recited in the third Gospel are compared with the same events as related by Mark, and in every instance it is shown that by characteristic terms and expressions a medical cast and complexion is given to the narrative by Luke, thus emphasizing sharply the difference between the writer of medical education and mind, and Mark who possessed no such knowledge.

Professor Harnack observes (p. 188):

"St. Luke in the Gospel narrates three other miracles of healing peculiar to himself (the widow's son at Nain, the woman with a spirit of infirmity, and the man with the dropsy), and, moreover, two pertinent parables (the Good Samaritan and Dives and Lazarus), while in the Acts . . . he narrates the cure of the lame man at the Beautiful Gate, of Eneas, of Tabitha, of Saul's blindness, of the lame man at Lystra, and the story of Elymas. There are also pertinent notices in the story of Ananias and Sapphira and the vision of St. Peter. Everywhere in the stories (which are, moreover, remarkable for fullness of detail) traits appear which declare the interest or the sharp eye or the language of the physician."

In final conclusion Harnack says (p. 188):

"The six conditions which are propounded . . . are amply satisfied in the case of the third evangelist. The evidence is of overwhelming force; so that it seems to me that no doubt can exist *that the third Gospel and the Acts of the Apostles were composed by a physician.*"

In the absence of facts bearing on the domestic relations, personal traits and professional characteristics of this historic personage, much of course is lacking that is necessary in order to form a true estimate of the man himself, and which would be of so much human interest to the medical profession, and to the whole world as well. That which stands out in his life-career

is nearly impersonal, and relates to the literary, dramatic and medical quality of the works coming from him to later generations. To show that these are of the very highest order enough has been said; and, as one of the apostles of the new religious cause, his versatile Greek mind found ample scope for the exercise of all its powers as, in the ministry of healing, he labored and wrought as the friend, traveling companion, physician and co-worker of Paul.

His keen insight and imaginative spirit enabled him before all others to grasp the dramatic possibilities of the theme that now filled him, and he bore witness to that faith in the manner best fitted to impress the multitude with what he believed was the truth, as then and there preached and presented.

His passion as a physician was for the cure of sick and distressed humanity, having been drawn professionally to embrace the new faith by manifestations of healing power in one greater than himself, and as a zealous disciple he thus justified and declared his profession.

But it is to be remarked that *he nowhere claims for himself the possession of miraculous powers or intimates their exercise by him*; it is only as a possible on-looker, or as scribe or chronicler, that note was taken of cures wrought in disregard of all physical laws as now known or understood in medical doctrine—a possible compromise between the science of the physician and the faith of the disciple.

The place or time of Luke's death is not known nor where his tomb was reared, if such he had, nor is such knowledge needful for "this whole earth is the sepulcher of illustrious men."

It was given to him through intellectual, moral and spiritual powers, never excelled, to lay deeper the foundations of his chosen faith in the consciousness of mankind than any other, or all others, of his co-workers—this being made possible by his true understanding of and appeal to child-nature, and a sense of sympathy and fellowship as a physician with the lame, the sick, the halt, and the blind.

He accepted the office and labored in his calling as a trusted follower of the founder of his faith whose true, strong and fitting title is simply the Great Physician, as it was that aspect of Christ's ministry which first drew the attention and claimed the support of this Greek lover of his kind—the artist, scholar, dramatist, poet and scientist—all harmoniously blended in the life, character and work of the illustrious apostle, Luke, the Beloved Physician.

GEOGRAPHY AND MEDICINE.*

BY M. G. SEELIG, M. D.,

Of St. Louis, Mo.



AAS has framed a beautiful metaphor, in which he likens the history of medicine to an imposing canvas, "whose atmosphere, tinted by immeasured distance, displays only a few clearer cloudforms in somewhat definite outlines and masses, while the limited background exhibits, in perspective, lofty temples, about whose portals wander priests to guard them from the entrance of the uncalled. On either side appear mighty crags and groups of lofty trees, whose foliage is penetrated by the powerful rays of the noonday sun, while the foreground greets us in undimmed brilliancy and instinct with life." The distant sky and its cloudy forms represent the mythical era of medicine, with its storied gods and demigods, the background holds the priestly thaumaturgic era, the middle ground typifies the philosophical era, the union of the terrestrial and celestial philosophy of medicine, and finally, the clear foreground stands for the scientific epoch with its practical ideas and principles. The attempt to trace the development of medical culture as depicted in this painting and to study the influence of geographical conditions on the course along which this culture marched, is not conceived with the idea of enunciating either new principles or new facts. The object is merely to play with a problem, to forsake for a while the stern demands of the pure science of medicine, and reverting to the methods of earliest times, to speculate. The speculation concerns itself solely with the problem of forces—given a definitely located center with equally definite lines of radiation, what forces have governed these radiations? Put in more limited and concrete form, the problem is to correlate the influence of geographical conditions with the spread of medical culture from Greece as a centre, Greece being selected rather than Egypt because, although standing in the mid-ground of the canvas, she is connected with the brilliant foreground of the present by an almost unbroken thread of written records. The term geography is not used in the sense of simple descriptive geography, dealing merely with boundaries and configurations, but rather in the sense of physical geography, which

*Read before the Medical History Club of St. Louis, Missouri.

applies to the facts and phenomena of the descriptive science, the principles of physics.

The solution of the problem is rendered both less difficult and less speculative by an understanding of certain general laws. For example, as Draper has pointed out in his "Intellectual Development of Europe," variations of human thought, and consequently of human action, depend in a general way upon the meridian of longitude or parallel of latitude along which people live and move. Variations of climate are much more pronounced in a North-South direction of longitude than in an East-West direction of latitude, and consequently, differences of manners, customs, and modes of civilization of a nation whose territory extends in the East-West direction are much less marked than in one whose territory extends North-South. A corollary to this law is the fact that a nation showing the least amount of variation in the civilization of its component groups possesses the greatest homogenousness, and is, consequently, best adapted for the thorough accomplishment of national endeavors. Buckle has emphasized this point most lucidly in his chapter on the influence of physical laws on the organization of society. He contrasts, for example, the cold, far north with the torrid, mid-equatorial regions, showing that in both these localities continuous, out-of-door employment is the exception, and the cultivation of desultory habits is the rule, owing to the extremely short days in the one region and the excessive heat and dryness in the other. As a result of the lack of steady endeavor there develops a national character more fitful and capricious than that possessed by another nation whose geographical situation vouchsafes an equal climate.

Food and soil as factors in influencing national motives and actions are, of course, largely the resultants of geographical situation and may be considered as subsidiary to climate. The case of Arabia, however, is so brilliant and concrete an example of the influence of the underlying physical laws of the soil on national activity that it well merits mention. Pick up any classical atlas, turn to Arabia and you will find it marked off into *Arabia petrea*, *Arabia deserta*, and *Arabia felix*—Rocky Arabia, desert Arabia, and blessed Arabia—the last-named narrow strip of land along the Red Sea and South coast being the only portion of the country possessing fertile soil. The Arabians up to the seventh century lived almost exclusively within the bounds of this extremely arid tract, as a rude, uncultivated people. In 641

A. D., they conquered Persia at the battle of Nehávend; during the greater part of the early decades of 700 A. D. they conquered most of Spain, and during the greater part of the eleventh century they were supreme in India. Hand in hand with their transplantation into new and fertile territories there developed a great change in national character, so that from a tribe of roving savages or mere wandering shepherds, they became the founders of mighty empires. Cities, schools and libraries grew up under their influence, and as a matter of fact they became the repository for the learning of the decadent West.

Instances of the regulating influence of the climate, food and soil on the minds and movements of races might be multiplied at great length were it an object to deduce proof. The point at issue here, however, is the statement of a thesis rather than the proof of one. The merest statement, however, were necessarily incomplete without the mention of one other regulating factor, namely, the profound influences exerted by the gross aspect of the physical surroundings on the temper of a people. Taine in his "History of English Literature" states as a truism the fact that man, forced to accommodate himself to circumstances, contracts a character and temperament corresponding to them; and among these so-called "circumstances" he lists physical surroundings as of prime importance. Buckle has divided the effects of man's surroundings into two groups; those resulting from direct stimulation of the imagination, and those resulting from direct appeal to the understanding or to logical methods of thought; active volcanoes, earthquakes, the avalanches from steep, snow-banked mountains, tempests, pestilences attributable to miasmatic marshes are all natural phenomena which act on the mind in a manner causing imagination to predominate over understanding. Superstition treads closely on the heels of imagination, and consequently, where such phenomena prevail, events are attributed to supernatural agencies rather than studied from the point of view of cause and effect. Barring the Spanish and Italian peninsulas, with their awe-inspiring mountains and their frequent earthquakes and pestilences, the proposition holds true that in the early civilizations exterior to Europe, those, for example, in tropical Asia, Mexico, Africa and South America, the aspect of nature was such as to strengthen the authority of the imaginative faculties at the expense of the reasoning ones. In Europe, where by way of contrast the works of Nature are less imposing and where natural forces are both less explosive and more subject to

prediction, man gained a greater equanimity of spirit, leading eventually from a sense of security to one of investigation.

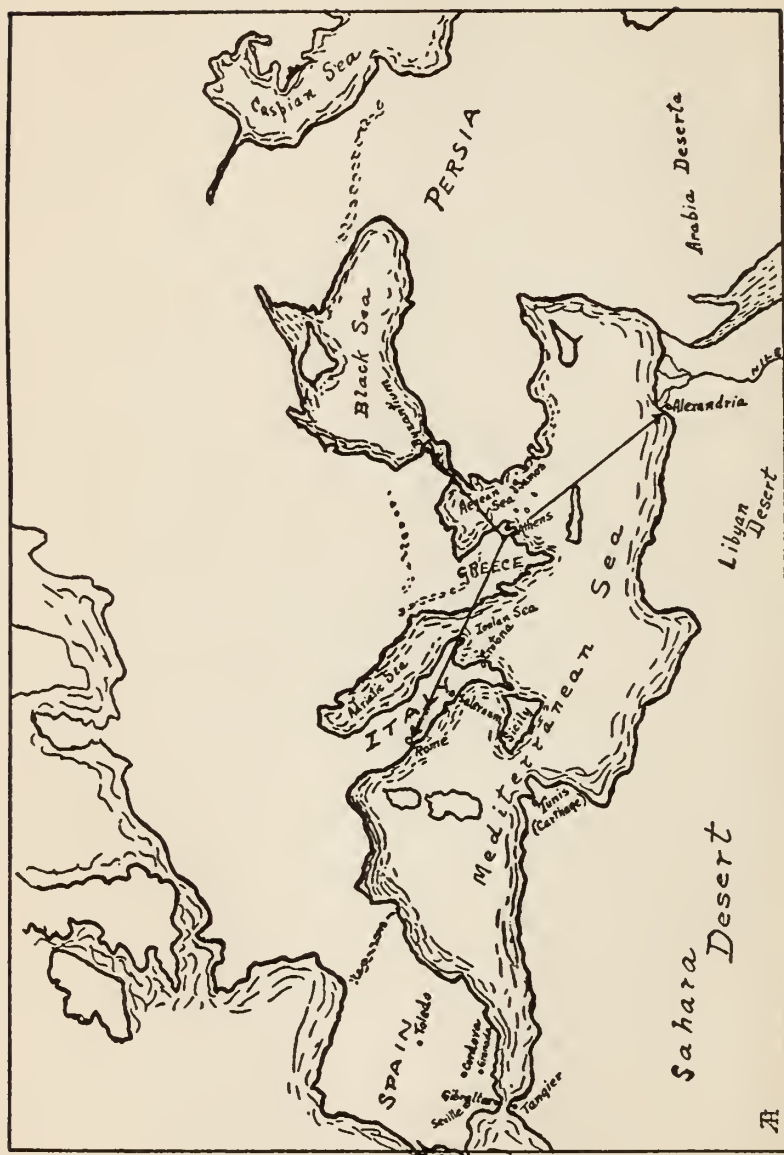
Natural phenomena are so often causable in their manifestations as to inspire a spirit of experimentation to determine basic principles. Greece, for example, which is to serve as our starting point, is a small land, where even the terrors of the seas are minimized by the numerous islands of the Grecian archipelago acting as breakwaters, where access is easy to Italy on the West, Asia Minor on the East and Africa on the South, and where the climate is equable and healthful. Hurricanes are infrequent, earthquakes rare and wild and noxious beasts scarce. The highest mountains nowhere reach the altitude of perpetual snow, and the large rivers are easily fordable. The direct effect on the early Grecian mind of such physiographical circumstances we shall revert to when we begin to trace onward the movement of medical learning. Here it will suffice to say that just as the influence of climate, soil and food exert themselves as forces acting in the direction of the accumulation and distribution of wealth, just so the aspect of a people's surroundings, appealing as it does to imagination and understanding, exerts itself as a force acting in the direction of the accumulation and distribution of thought. Indeed, so definitely are these impulses at work that we might well turn physicist for the time and frame them in the law of parallelogram of forces.

The difficulty of such a task,—of embracing the principles of national growth under the laws of pure physics—is inherent in the fact that the elements governing and regulating human motives are so bewilderingly complex and multitudinous that it is almost impossible to trace them to their individual sources. If we grant this difficulty, however, and at the same time concede that the factors already mentioned do influence the course of men, there will be no small interest in tracing the path that medical science took as it was carried by the various peoples in their movements. Up to this point we have not considered the influence of geography in the sense of a descriptive study, contenting ourselves rather with the purely physical aspect of the science. When it comes to tracing paths, however, we find ourselves forced to take into consideration natural obstacles and natural highways; in other words, to supplement physical with descriptive geography.

And in this spirit we shall start the march from ancient Greece, a land where people were the first in the world's history

to display a partial subjugation of the imagination to the understanding, a land where the sceptical and inquiring faculties of the human understanding were developed hand in hand with preservation of the instincts of the imagination. The physical bases for such a state of national mind we have already studied; it remains, therefore, only to show that Grecian medicine mirrored these same characteristics. To do this we need only to recall that Hippocrates, who really was Greek medicine, was experimenter, rationalist and clinician, even in our modern sense; primarily a student of cause and effect, he very thoroughly eradicated the mystic and superstitious elements, thereby demonstrating that in medicine also, the Greek mind was working towards the end of subjugating imagination to logical processes of thought. If further confirmation of this fact be sought, it may be found in the fact that after Hippocrates Greek medicine was made up to Hippocratic dogma plus veritable mazes of philosophical systems; systems which in many instances were crude, but which in all instances have properly retained the characterization, philosophical.

The unquestioned leader in this philosophical movement was Aristotle and his most famous pupil was Alexander, the great Macedonian. In this academic relationship between Aristotle and Alexander, we have the earliest beginning of the spread of Greek medicine, and here for the first time we encounter the limiting influence of the "lay of the land." It must not be forgotten that Alexander's journey which led eventually to the founding of Alexandria in Africa was not entirely a military, but in large part a scientific undertaking. Aristotle's "History of Animals" has been said truly to have been the earliest force at work, leading to the establishment of the museum at Alexandria. With the objects in view of exploration and conquest, what course would an expedition take from Greece as a starting point? To the North lay the threatening Balkan Mountains and the more threatening, wild and warlike tribes of the early Teutons, to the West lay the Adriatic and Ionian seas, to the South the Mediterranean, to the East the Aegean. Sea-invaded peninsula that it was, Greece herself offered practically all the opportunities to study the phenomena of the ocean without the aid of an expensive armada. Moreover, from the point of view of conquest, the questions of subsistence and uncertainties of wind and current would have rendered a land journey preferable, other things being equal. And other things were



MAP ILLUSTRATING DR. M. G. SEELIG'S "GEOGRAPHY AND MEDICINE."

more than equal, for toward the Northeast lay the fertile lands south of the Black Sea, the territory of the wealthy Persians. To encounter the Persians in their own lands it was necessary merely to cross the Bosphorus, a narrow strait, well-guarded by the Grecian citadel of Byzantium where Greek ideas and medicine flourished with true Athenian vigor. That this crossing was made and that the Persians were conquered are matters of history and need not detain us, for whom the point of interest lies merely in noting that geographically the path followed was one of least resistance leading still farther over an unimpeded land route across Northern Arabia to one of the world's most fertile territories, the valley of the Nile. The subsequent founding of Alexandria on the bank of this stream was the end accomplishment of an undertaking, the course of which in the absence of historical data might have been predicted with reasonable assurance on pure *a priori* grounds.

At an even earlier date than the foundation of Alexandria, Greek medicine was veering its course towards Rome. The political state of Rome at this particular time, a period of political organization, need not delay us; our interest does not concern itself with either the primitive nature of Roman medicine or with the firm root that the graft of Grecian science took in Roman soil. These are matters of history that are well known. The route by which the transfer occurred from Greece to Rome is our topic; and it is interesting to note here again the important circumstance of the geographical configuration. Pythagoras, the Grecian philosopher of Samos, fled from his native land from fear of the ruling tyrant, Polycrates, and sought the shores of Italy. Why Italy instead of Northern Greece, or possibly Persia, no one knows; but the fact of importance is that seeking Italy he reached it by the most direct route, landing at Crotona and establishing there the first Greek school of science and philosophy in Italy. From the west coast of Greece across the Ionian Sea to the town of Crotona is almost an air line, and with geographical conditions as they are, it represents a "path of least resistance." In a land where "all roads lead to Rome" the journey from Crotona to the capitol was not long in the making; indeed, as a matter of fact, when they are banished from Crotona (500 B. C.) the so-called *periodeutae* or itinerant physicians of the Pythagorean school spread over Italy in all directions.

Thus far then, we have seen Greek medicine transplanted and flourishing in four centers: Athens, Byzantium, Alexandria and

Rome. From Athens as a seat, lines radiating to the other three cities form a tripod (*see map*), graphically indicating the onward movement from a center, and metaphorically suggesting the influence on world history of a people who had so religiously governed their acts in accordance with the oraculous words of the Pythian priest seated on his tripod at Delphi.

Greece succumbed to Roman supremacy, Rome in her turn was humbled by the onslaughts of rude Teutonic tribes, Byzantium, long since rechristened Constantinople, fell under the power of the Ottoman Turks, and that marvellous storehouse of learning, the Alexandrian library and museum, was almost totally consumed by fire. These were indeed tragedies, affecting not only the political status of the nations involved, but also the general state of learning. The fall of Rome marked the beginning of the "middle," or more literally called "dark" ages. In all Europe during these times there was not even a glimmering remnant of the former beacon light of learning, medicine in particular degenerating into a thaumaturgical ritual of superstitious beliefs. But the spirit of Greek medicine did not die. It owed its preservation to two facts; firstly, the expedition of Alexander, already noted, served to Hellenize the Arabs in such a manner that they both absorbed and preserved the principles of Greek science; and secondly, the banishment of the Nestorians from Byzantium at a later date intensified the former process of Hellenization. This learning of Greece, the Arabs carried with them in all wanderings and expeditions. We should naturally suppose that the fertile valley of the Nile and the almost equally fertile north coast of Africa would attract the leaders of Arabian tribes. As a matter of fact, history both confirms this supposition and points the way in which the learning of ancient Greece was transplanted on European soil through the Arabians as hosts.

Once secure as lords of fertile lands, the Arabians, as we have already seen, became zealous in their cultivation of the principles of learning. Whether or not the Arabian and Jewish physicians added to the principles of medicine transmitted to them by the Greeks is immaterial to our inquiry. Our interest being geographical concerns itself with the fact that a fertile Mediterranean shore held the Arabs in its proximity just as the Sahara and Lybian desert ominously warned them away from Central Africa. Held thus within the confines of the narrow strip of land extending from the Nile to the Atlantic Ocean and from the deserts to the Mediterranean Sea, these people were

never far separated from European shores. This very proximity to Europe, in itself, suggests the possibility of trans-Mediterranean passages.

In the Mediterranean Sea there are two natural causeways leading to Europe; one of them lies between the toe of Italy and Tunis in Africa with the single stepping stone of Sicily between, and the other is the narrow strait between Tangier and Gibraltar. If our assumption that geographical contour affects the movements of nations is correct, then we should expect the Arabs to have crossed at one or both of these two most favorably marked-out spots. And that crossings did occur at these two points is a matter of history. Constantinus Africanus who has been called "the inventor of medicine," a Carthaginian, leaving his home, crossing over Sicily to the famous monastic medical school of Monte Cassino, introduced Arabian medicine into Europe. Furthermore, the fact that the great school at Salerno became a true university with departments of theology, jurisprudence, philosophy and medicine, is largely attributable to Arabian influence,—an influence rendered easily possible, as, as Bass says, "by reason of the propinquity" of Arabian folk. The part then that these two schools of Monte Cassino and Salerno played in the resurrection of medical learning in Europe was indirectly, or possibly directly, dependent upon the proximity of the toe of Italy to Carthage in Africa.

Further west we have noted another favorable site of crossing, so favorable indeed that no Sicilian stepping stone was necessary to bridge the sea. Neither biographical nor historical data are necessary to prove that the crossing of the Moors into Spain occurred at this point. The very name Gibraltar is derived from the Arabian "Jebel al Tarik"—the mountain of Tarik—the mountain being situated in Spain and Tarik being a general of the Governor Musa, under whom the Arabians conquered the north coast of Africa as far as the Atlantic. The universities of Cordova, Granada, Seville and Toledo, among others, are monuments to the fact that the Arabs carried and transplanted learning with them. How well they sowed may be gleaned from the old-time characterization of Cordova (under Arabian rule) as "The Center of Religion, the Mother of Philosophers, the Light of Andalusia."

And so we have traced the development of medicine in a flattened circle from Athens, east and west and almost back again, through stress and storm, over land and sea, from the earliest

period of the true awakening of man down to the middle of the darkest time of the world's history. We have sought the bounds that Nature set against this march of development, and our conclusion that such natural bounds in truth exist, only affirms the words spoken centuries ago by the Arabian general Akbah who, after having forced his way from the Nile to the Atlantic, rode his horse into the surf exclaiming "Great God! If my course were not stopped by this Sea, I would still go on to the unknown Kingdom of the West."

AN ACCOUNT OF THE FESTIVAL HELD AT STOCKHOLM, MAY, 1907, IN COMMEMORATION OF THE 200TH ANNIVERSARY OF THE BIRTH OF CAROLUS LINNAEUS.*

BY WILLIAM WILLIAMS KEEN, M.D., LL.D.,
Of Philadelphia, Pa.



AS your delegate to the Linnaeus Festival of the University of Upsala and of the Royal Academy of Sciences in Stockholm, held from May 23 to 26, 1907, in commemoration of the 200th anniversary of his birth, I have the honor to make the following report:

As the ceremonials—particularly that of the conferring of honorary degrees—differ in many respects from those usually seen in America, I have ventured to describe them in some detail. As I have pointed out in an address on the "Graduation Ceremony,"† Upsala has preserved more of the medieval customs than any of the European universities except the University of Coimbra in Portugal, from which there was a delegate present wearing the peculiar robe and cap seen only there.

Moreover the present is the first occasion on which honorary degrees have been conferred by Upsala on any foreign scholars. Even in 1877 when they celebrated the 400th anniversary of the foundation of the University in 1477 no degrees were given to foreigners.

Never have I seen so well organized a fête. Before his arrival everyone had the number of his room, a number for his

*Report made to the American Philosophical Society as its Delegate.

†Medical Library and Historical Journal, 1906, iv., pp. 1-14.

baggage, for his seat at every function, for his hat, etc. All baggage was taken in charge at the station; carriages were there for everybody. The delegates and their families were the guests of the University for the two days in Upsala, and all charges for rooms and meals were defrayed by the University. Moreover, the Stockholm Academy of Sciences presented each delegate with four volumes in octavo and one in folio of the works of Linnæus and a medal as delightful mementos of a remarkable festival.

In front of the railroad station and in front of the "University House" were planted a circle of standards with the flags of all the nations represented, while the town was profusely decorated with flags and evergreens. As the students number 1,800 in a population of only about 25,000 they practically are the town.

When the special train arrived the students were there in procession to greet their guests. As all of them wear white caps (the one hundred women students wearing the same), as the marshals wore long effective, broad sashes of bright yellow and blue (the Swedish colors), and there were over a dozen banners and corps flags grouped in the centre, the scene was very picturesque. The singing by the students was the best I have ever heard. A brief Latin salutatory speech ended the proceedings at the station.

As soon as we reached our rooms there appeared a young woman to measure our heads and our ring fingers for the hat or wreath and the ring for the following day's promotion.

At noon on the 23d, the proceedings were held in the splendid aula of the University House. This hall resembles in general that at Yale. It is very nearly as large and even handsomer. The king's health prevented him from taking part in any of the functions, but he was well represented by the Crown Prince,* who is also Prince Regent, a very affable man of about fifty. He and the other members of the royal family mingled with their guests most informally and agreeably. After a cantata by a band and a chorus and an address by Rektor Schuck the various countries were called alphabetically and the addresses from various universities and scientific bodies were presented. Only one delegate from each country spoke—an excellent arrangement, as it shortened the time very acceptably.

*The present King.

In the afternoon the students gave a delightful concert and garden party in the Botanical Garden. At 6.30 the Archbishop and the Rektor entertained one hundred and seventy guests at dinner. The three toasts were proposed by Dr. Schuck in French, Swedish, and faultless English, and I was told that he was equally at home in German, Italian, Spanish and Latin. A reception ended a delightful day.

On May 24th the conferring of degrees took place in the cathedral. This is 360 feet long and a fine example of pure Gothic. It was founded in 1250 and contains the tombs of Gustavus Vasa and other famous Swedes. In the north aisle lie the bones of Linnaeus and in a chapel near by a dignified simple monument records his birth and death. I was told that there were about 6,000 people present and I hardly think it an exaggeration. In the west gallery besides the large organ was a military band and in the choir an orchestra and an excellent chorus. The procession was led by about a dozen marshals in their white caps and Swedish sashes, and when the delegates in academic robes, uniform or evening dress were seated, the marshals and the bearers of the banners and flags lined each side of the middle aisle while the Prince Regent and the royal family entered.

After singing a cantata composed in 1877 for the quarto-centenary, honorary degrees were conferred in Theology, Jurisprudence, Medicine and Philosophy. The Promoter in each Faculty first made a short Latin address. Each graduand then advanced into the choir by three steps of the "Parnassus," as the ascent was called in the program. In Theology, Law and Medicine the Promoter placed a top hat on the candidate's head, a ring on his left ring finger, and handed him three diplomas, one, the official one, sealed and stamped with a 100 Kroner Stamp (\$28; this tax was paid by the government), the two others being duplicates, but unsealed and unstamped. The hat was peculiar. In color it was black, but the vertical portion was plaited vertically in plaits about one inch wide; in the front of the band was a small gold shield.

Each graduand in Philosophy instead of receiving a hat, had pinned on his breast beforehand a laurel wreath. This was unpinned by a marshal on the first step of the Parnassus and was handed to the Promoter, who thereupon crowned the recipient, placed the ring on his finger, gave him his diplomas, and

shook hands with him most cordially. The new laureates in descending the Parnassus bowed to the Archbishop, the Rektor and the Crown Prince.

When the first candidate in each Faculty was capped or crowned a battery of artillery on the place in front of the cathedral began firing a salute and continued until the last degree in this Faculty had been conferred, only to break out anew for each succeeding Faculty.

After all the degrees in each Faculty had been conferred the orchestra rendered a musical selection. They were all finely given, but the music chosen amused us. For the Theologs (I presumed they were Lutherans), they gave the "March of the Priests of Baal"; for the lawyers, "See the Conquering Hero Comes"; the doctors were welcomed by Schubert's "Death and the Maiden"; (I concluded, charitably, that she had appendicitis and was rescued from death by the doctor); while the new Doctors of Philosophy were honored by Mendelssohn's "Wedding March," which I interpreted as either a reminiscence, an exhortation or a prophecy.

The rings differ for each Faculty, that for Philosophy being engraved outside with the laurel wreath and on the inside with the name of the owner, that of the University, the degree conferred, and the date. In Theology and Law, degrees were only conferred upon Scandinavians. In Medicine, Haeckel of Jena was the most notable among the thirteen foreigners. In Philosophy, Professor Hjelt of Helsingfors, who had received his doctorate in 1847, and eighteen Swedes who graduated in 1857, were made "Jubilee" Ph.D.'s. Fourteen foreigners received this honorary degree, among them two Americans, Professor Farlow of Harvard and your delegate.

After the conferring of the degrees followed one of the prettiest and pleasantest features of the day. The newly made doctors all marched in their robes, hats and wreaths to the nearby University House and stood on the ample steps, while the whitecapped students, with songs, banners and flags, marched up and stood in foot of the steps. After some fine singing the leader greeted the new doctors, now their brethren, in an admirable Latin speech, to which a reply was made in Swedish by one of the honorary doctors, and the students, after the usual four Swedish "hurrahs," marched off singing, lifting their hats as they passed the steps.

Another official dinner and a ball, ending in that latitude in broad daylight at 3 A. M., concluded the exercises in Upsala.

On the 25th the Academy of Sciences met in Stockholm at 2 P. M. in the Academy of Music. A cantata was sung, after which Count Morner, the President, delivered an oration and the institutions which had been invited presented addresses, in groups from each country, only the first delegate making a brief presentation speech. A dinner followed in the evening.

On the 26th an excursion was made in the morning to Hammarby, the home of Linnaeus, and from 4 to 5.30 P. M. the Prince Regent entertained the foreign delegates and a few official Swedes at a tea and garden party at the palace quite informally, and most delightfully.

TUBERCULOSIS AND THE CREATIVE MIND.

(Concluded from "*Medical Library and Historical Journal*,"
1907, v, p. 249.)

By ARTHUR C. JACOBSON, M.D.,
Brooklyn-New York.

Charlotte Brontë ("Curren Bell").—All of the Brontë sisters died of tuberculosis. The brother, Branwell, also died of the same disease.

The girls appear to have been of the precocious type which we associate with the rather characteristic physical delicacy that so often, in the young, denotes a tendency to tuberculosis.

Maria died in her twelfth, Elizabeth in her eleventh year. Branwell died in his thirty-first year, Emily at the same age. Ann succumbed in her twenty-ninth year. Charlotte died on March 31, 1855, aged thirty-eight. (In private life Mrs. A. B. Nicholls).

Here we have a remarkable instance of an entire family afflicted by the disease and three sisters who reached adult life displaying extraordinary intellectual faculties.

Critics are somewhat divided as to who was the ablest, some favoring Emily ("Ellis Bell"). She possessed a powerful and fantastic imagination. The world's verdict, of course, has been in favor of the author of "*Jane Eyre*"—and the world is usually right. Ann ("Acton Bell") is ranked third.

Matthew Arnold declared that for passion, vehemence, and

grief, Emily had had no equal since Byron. Charlotte possessed a great insight into character, a fiery imagination, and "an extraordinary, indeed astonishing, power of expressing passion, with an equal power of giving reality to her pictures which transfigures the commonest scenes and events in the light of genius."

What figures, real or imaginative, could be more pathetic than the fragile little Brontë children, dedicated from birth to the great white plague. Think of them in their lonely walks over the great moors which stretched about their father's gloomy rectory, with absolutely no companions and no childish joys. Yet what a victory did they snatch from their death, as they wasted and wore away. Where is the sting of such a death? Whose the real victory? "Give me thy body," says Tuberculosis to Genius, "and I will give thee Immortality, an immortality more sure than any promised by the theologians. Thou shalt be enshrined forever in posterity's heart and brain. Thou must, in any case, later or sooner, die of some disease or hurt. What matters it physically whether it be tuberculosis at thirty-eight or apoplexy at seventy-eight? What it matters intellectually is of an import indeed tremendous. Shall such an exchange be rated unfair to thee or to mankind? And mankind must be afflicted if thou art to be infected. Ah, well, mankind must pay well for its highest genius. Too dearly, say'st thou? Nay, not so. 'Upon such sacrifices the gods themselves throw incense.'"

Jean Jacques Rousseau.—There is some obscurity as to just what caused the death of Rousseau. Morley inclines to the suicide theory.

"He was born dying, and though he survived this first crisis by the affectionate care of one of his father's sisters, yet his constitution remained infirm, sickly, and disordered."

He refers in the "Confessions" to the ill-health of his youth.

In 1733, when about twenty-one years of age, Rousseau's health began to show signs of a complete breakdown. He became very weak, suffered from palpitation and shortness of breath, and had pulmonary hemorrhages. He suffered from a slow feverishness, from which he never afterward became entirely free. "His mind," says Morley, "was as feverish as his body," a suggestive comment, indeed.

John Ruskin.—"The writer of the Victorian era who poured forth the greatest mass of literature upon the greatest variety of subjects" possessed an "organization of abnormal delicacy." At sixteen he had a sharp attack of pleurisy. At twenty-one,

while at Oxford, he had an alarming hemorrhage from the lungs. His University career was thus suddenly broken. "For nearly two years he was dragged about from place to place, and from doctor to doctor, in search of health." He had a series of "fevers" while in Italy and the Alps. Immediately upon his marriage his pulmonary disease again became alarmingly manifest (April 10, 1848). He remained invalided until August.

Ruskin wrote more than eighty distinct works upon subjects comprising "Mountains, Rivers and Lakes; about Cathedrals and Landscapes; about Geology; about Minerals, Architecture, Painting, Sculpture, Music, Drawing, Political Economy, Education, Poetry, Literature, History, Mythology, Socialism, Theology, Morals." He was indeed "a brilliant and noble genius * * * who in the English-speaking world left the most direct and visible imprint of his thoughts."

"Modern Painters" and "The Seven Lamps of Architecture" belong to the period of his active tuberculosis and inaugurated the long list of his epoch-making works.

Charles Kingsley.—We read in Mrs. Kingsley's work of the repeated "breakdowns" of Canon Kingsley. In 1849, at thirty, he was in ill-health. In 1864-5, at the time of the Newman controversy, his health again became precarious. He goes to the continent with Froude. At Denver, Colorado, in 1874, he has an attack of pleurisy; in 1874-5, he is "a shrunken figure." On November 30, 1874, he contracts a "cold," develops a bronchitic cough, and takes to bed December 28. Repeated hemorrhages occur, and on January 23, 1875, he finally succumbs.

Robert Southey.—Southey suffered from a "nervous fever" in 1800-1. A year in Portugal "restored his health." He was then twenty-six. "Thalaba, the Destroyer," was finished during this period. Although his health is alleged to have been restored in 1801, Eldridge's drawing in the National Portrait Gallery, made in 1804, shows a delicate appearing man. The same may be said of Phillips' and of Hancock's portraits.

Nathaniel Hawthorne.—At the age of nine Hawthorne met with an accident. A ball struck him upon the foot and he was severely lamed. He was kept at home for a long time and had not completely recovered before his twelfth year.

Pickard says: "Nathaniel received an injury to his foot when eight or nine years of age, and was obliged to use crutches for a time. He later had an illness which compelled him to resume his crutches."

His sister Elizabeth tells us that "his foot pined away and was considerably smaller than the other. He had every doctor that could be heard of * * * he went upon two crutches. Everybody thought that, if he lived, he would be always lame. * * * It was during his long lameness that he acquired his habit of constant reading. Undoubtedly he would have wanted many of the qualities which distinguished him in after life, if his genius had not been thus shielded in childhood."

Here, very evidently, is an example of localized, joint tuberculosis. The injury was the exciting cause acting with and upon a predisposing one. This is the usual history in such cases.

Like Scott, this "most eminent representative of a literature, * * * the most valuable example of the American genius," "became a vigorous, ruddy-faced, broad-shouldered, handsome man." Open air life on the family farm at Sebago Lake, Maine, saved him.

The description of his last days, as given by Julian Hawthorne and Mrs. Lathrop, is quite suggestive. He was taken to see Dr. Oliver Wendell Holmes in March, 1864. He was led to think that the visit was purely social, but Holmes had been asked to give the family some idea of Hawthorne's condition, which was giving the family great concern. Holmes thought him to be suffering from "a gradual wasting or consumption of the bodily organs." This is not Oslerian diagnosis, but it was probably the most that Holmes could tactfully determine without defeating the family's idea of not apprising Hawthorne of the visit's real object.

Robert Pollok.—At the age of twenty-eight, just as he was becoming justly famous, Pollok died of pulmonary tuberculosis. He is considered to have shown marked force and originality, and "The Course of Time," for so young a man, was "a vast achievement."

Michael Bruce.—Bruce died of phthisis at the early age of twenty-one. The "Elegy" was written in the spring of 1767, "with death full in his view."

"Oft morning dreams presage approaching fate;

And morning dreams, as poets tell, are true.

Led by pale ghosts, I enter Death's dark gate,

*And bid the realms of light and life adieu."*¹¹

¹¹ The reader will observe a suggestive parallelism between these words of Bruce and certain of Shakespeare's "Sonnets" (see the Shakespeare study which follows).

Hannah More.—At all periods of her life Mrs. More had been liable to a chronic affection of the chest, accompanied with fever. Her strength, she herself said, was all superinduced; “none of it is natural to me.”

Of herself she observed that “she never felt so sensible to the majesty and beauty of the Psalms, or so capable and desirous of writing a commentary upon them, as when upon a sick-bed.” And “Bishop Porteus, whenever he heard she was confined to her bed by sickness, always said he looked for a new book from her.”

Pierre Jean de Béranger.—“The Burns of France” tells us in his “Memoirs” that in 1801 his constitution was very feeble. “No one believed that, pale and meagre as I was, I should ever attain to my thirtieth year. My chest appeared to be in a very bad condition, and my father was constantly repeating to me, ‘You have not long to live, I shall bury you soon.’ Neither of us was affected at such a prospect.” (They were all but starving in a garret.)

Béranger had been a sickly child. When he became famous, in 1813, he was thirty-three and in wretched health.

So great was the popularity of the national song-writer of France that it has been said of him that “he was the only poet of modern times who could altogether have dispensed with printing”—for “one man sang his songs to another over all the land of France.”

Toru Dutt.—This exotic flower of genius died at the age of twenty-one. The last four years of the life of the high-caste Hindu poetess were spent in the old garden house at Calcutta, “in a feverish dream of intellectual effort and imaginative production.”

“When we consider,” says Gosse in his “Memoir,” “what she achieved in the last forty-five months of her life, it is impossible to wonder that the frail and hectic body succumbed under so excessive a strain.”

William Ellery Channing.—Channing’s life tends to parallel Emerson’s in its physical aspect as it does in its intellectual.

The brother Francis dies in 1810 of tuberculosis. William Ellery himself spends the years 1822-3 in Europe because of wretched health. He is now forty-two. The father had died young (in 1793, aged thirty-six), leaving a widow and a large family. William Ellery is afflicted most of his life by a chronic debility accompanied with fever. William H. Channing, in the

"Memoirs," alludes to "the wasted form, thin features and sunken eyes of the preacher, whose spirit seemed about to cast aside the body." Upon his dying bed the man's intellectual processes are exalted, recalling those of Lanier.

The portraits of Washington Allston and of Gambardella reveal the phthisical physiognomy.

Immanuel Kant.—Kant was of weak frame. He was barely five feet in height. His chest was concave, the right shoulder drawn downward—characteristic evidences of fibroid phthisis. In consequence of his contracted chest he suffered from respiratory oppression. When writing the "Kritik," in 1771, his health was seriously impaired; later, it is unceasingly broken. Only by the most systematic living and assiduous care was he able to keep body and soul together. He had, he said, overcome a tendency to cough. His force of thought was remarkable enough to account for this. It will be recalled in this connection that at the age of seventy he wrote an essay "On the Power of the Mind to Master the Feeling of Illness by Force of Resolution." His life was certainly one long demonstration of the above theorem.

Madame de Staël.—She whom Lamartine characterized as "the last of the Romans under this Cæsar (Napoleon), who dared not destroy her, and could not abase her," died of "a general declension of her constitution." Portal's brochure on her "Malady and Death" does not edify one very much.¹² Her illness was a long one, attended by fever and wasting. Chateaubriand records that "an ardent fever animated her cheeks." "Her features were kindled with an animation which made a strong contrast with her feeble condition" (George Tichnor). Her brilliant intellect was vivacious to the last. She would come home exhausted from evening gatherings where she had been more brilliant than ever.

Thus the clinical picture as presented by her biographers suggests tuberculosis and nothing else.

"*Thomas Ingoldsby*" (Richard Harris Barham).—The author of the "Ingoldsby Legends" was "endowed with a sanguine temperament and an indefatigable power of work."

The "Legends" were published collectively in 1840. The first one had appeared in 1837. Barham died in 1845 after a

¹² Friedländer, too, made no diagnosis.

long illness, the description of which in his "Life and Letters" is a good account of the clinical characteristics of laryngeal phthisis.

Six of his nine children died during his lifetime.

James Ryder Randall.—The song which Oliver Wendell Holmes characterized as the greatest war song of any nation, "Maryland, My Maryland," was written by Randall at the age of twenty-two. Shortly before this he had gone into a "decline" and had been forced to leave Baltimore and find a refuge farther south, in Louisiana.

" * * * Some powerful influence seemed to possess me, and almost involuntarily I proceeded to write the song of 'My Maryland.'

"I remember that this idea seemed to take shape as music in my brain—some wild air that I cannot now recall. The whole poem was dashed off rapidly when once begun. It was not composed in cold blood, but under what may be called a conflagration of the senses, if not an inspiration of the intellect. No one was more surprised than I was at the widespread and instantaneous popularity of the song I had been so strangely stimulated to write."

Nikolai Vassilyevitch Gogol.—The father of modern Russian realism was afflicted about 1837. The first volume of "Dead Souls" was published in 1842. Gogol died at the age of forty-three. He was one of the greatest of Russian writers.

Fyódor Mikháylovitch Dostoyevski.—Dostoyevski died in 1881 of "lung trouble." "His power of psychological analysis, * * * especially of pathological conditions, aided as he was in this by his complete self-identification with the * * * characters depicted, has nothing similar in all the range of universal literature."

Shakespeare.—As might be supposed, naught but the flimsiest data exist bearing upon the medical history of Shakespeare and his kin. He would be presumptuous indeed who should pretend to contort such data into alleged definitiveness. No sophistry, however, shall be invoked to convert what the writer considers merely suggestive into the golden glow of a factitious vraisemblance. Such a task were more worthy of the literary metaphysicians who live in that intellectual country wherein prevail the chilling blasts of Baconian "brain-storms."

Taine, like many other commentators, considers that Shakespeare reveals himself in many places, particularly in the

"Sonnets." "Look now. Do you not see the poet behind the crowd of his creations? They have heralded his approach; they have all shown somewhat of him."

"We pause stupefied," Taine continues, "before these convulsive metaphors, which might have been written by a fevered hand in a night's delirium, * * *."

*"Ah, wherefore with infection should he live,
And with his presence grace impiety,
That sin by him advantage should achieve,
And lace itself with his society:
Why should false painting imitate his cheek,
And steal dead seeing of his inward hue?
Why should poor beauty indirectly seek
Roses of shadow, since his rose is true?
Why should he live, now Nature bankrupt is,
Beggard of blood to blush through lively veins?
For she hath no exchequer now but his,
And, proud of many, lives upon his gains.
O, him she stores, to show what wealth she had
In days long since, before these last so bad.*

*"Thus is his cheek the map of days outworn,
When beauty liv'd and died as flowers do now,
Before these bastard signs of fair were borne,
Or durst inhabit on a living brow;
Before the golden tresses of the dead,
The right of sepulchres, were shorn away,
To live a second life on second head;
Ere beauty's dead fleece made another gay:
In him those holy antique hours are seen,
Without all ornament, itself, and true,
Making no summer of another's green,
Robbing no old to dress his beauty new;
And him as for a map doth Nature store,
To show false Art what beauty was of yore.*

*"That time of year thou mayst in me behold
When yellow leaves, or none, or few, do hang
Upon those boughs which shake against the cold,
Bare ruin'd choirs, where late the sweet birds sang.
In me thou seest the twilight of such day
As after sunset fadeth in the west;
Which by and by black night doth take away,
Death's second self, that seals up all in rest.
In me thou seest the glowing of such fire,
That on the ashes of his youth doth lie,
As the death-bed whereon it must expire,
Consum'd with that which it was nourish'd by.
This thou perceiv'st, which makes thy love more strong,
To love that well which thou must leave ere long.*

"No longer mourn for me when I am dead,
 Than you shall hear the surly sullen bell
 Give warning to the world that I am fled
 From this vile world, with vilest worms to dwell:
 Nay, if you read this line, remember not
 The hand that writ it; for I love you so,
 That I in your sweet thoughts would be forgot,
 If thinking on me then should make you woe.
 Or, if (I say) you look upon this verse,
 When I perhaps compounded am with clay,
 Do not so much as my poor name rehearse;
 But let your love even with my life decay;
 Lest the wise world should look into your moan,
 And mock you with me after I am gone."

As to time of writing, the "Sonnets" date from 1597-1603. In the former year Shakespeare was about thirty-three years old. Some of the sonnets have been said by competent critics "to relate to critical circumstances in Shakespeare's life, of which we know no more than that they must have occurred before 1599." They are unquestionably self-revelatory, these sonnets, though the allusions are veiled. They were written in his youth, thought Coleridge, who, with Wordsworth, believed in their autobiographical character. The latter emphatically declares them to express Shakespeare's "own feelings in his own person."

"* * * in some respects the most interesting of Shakespeare's writings [the 'Sonnets'], as they tell us most about himself." (Garnett and Gosse.)

Says Gerald Massey, in his interpretative book on the "Sonnets": "These sonnets have the authority of parting words; for they were written when Shakespeare was ill, as I understand him. * * * This is a group (Sonnets 63, 67, 68, 71, 72, 73, 74, 81) of very touching sonnets. Nowhere else shall we draw more near to the poet in his own person. They look as if written in contemplation of death. They have a touch of physical languor; the tinge of solemn thought."

"Shakespeare died of a fever * * *." (From Memoranda of Rev. John Ward, vicar of Stratford-on-Avon in 1662.) He was comparatively idle during the four years and a half that intervened between the writing of the "Tempest" in 1611 and his death.¹³ Halliwell-Phillips thinks that he may have

¹³ "Now my charms are all o'erthrown,
 And what strength I have's mine own;
 Which is most faint:"—Epilogue, *Tempest*.

written two or three plays, among them "Henry the Eighth," after the performance above alluded to. An active literary career abandoned at the age of forty-seven! He had ceased to act about 1604, or twelve years before his death, being then only forty! His will was prepared in January, 1616, and signed in March, which commentators believe to indicate that he had been in poor health for some time before his death on April 23 of that year. Moreover, we may infer that the visit of Ben Jonson and Drayton to New Place, shortly before his taking to bed, was in the nature of a leave-taking.

Why the delay in signing the will? Did he still have *hopes* of recovery?

"A remarkable phenomenon attends Shakespeare's later dramatic work. This is his constant endeavor to diminish the labours of composition. In every play known with certainty to have belonged to his later period, 'A Winter's Tale' alone excepted, recourse is had to some device tending to save trouble to the author. * * * The labour-saving tendency * * * is undeniable." "Some portions of 'Henry the Eighth' indicate beyond dispute the authorship of Fletcher * * *."

The portrait on the title-page of the First Folio edition of Shakespeare (British Museum; copied from the original in oils of 1609) reveals a poor physique. Aubrey, it is true, called him "a well-shap't man."

The bust on Shakespeare's tomb is not the original bust described in Sir William Dugdale's "History of the Antiquities of Warwickshire," prepared about 1638. Instead of the "heavy, stupid looking man" portrayed in the present bust we see an individual with hollow cheeks.

Shakespeare's daughter Susanna died at the age of twenty-four, his son Hamnet at the age of eleven. His sister Margaret lived one year, his sister Ann eight years. The brother Richard died in his thirty-ninth year, the brother Edmond in his twenty-seventh year. None of his three grand-children by his daughter Judith reached the age of twenty. The Shakespeare lineage became extinct in 1670, fifty-four years after the death of the poet.

Did we surely know that Shakespeare was one of the world's great consumptives, a chapter would be added to the evidence bearing upon the Baconian "controversy" that to the writer's mind would be strongly indicative of the authorship of the immortal works of the greatest creative mind of all time, for

Bacon's well known history furnishes no suggestion that he suffered from such a disease as tuberculosis. What tuberculous genius ever possessed an "extraordinarily unemotional mind," an "insensibility to emotional sensibilities," "a certain deadness towards exalted moral sentiment"? Did such traits characterize the man whom Ben Jonson addressed as "Sweet Swan of Avon"?

III.

While only a few literary stars of the first magnitude have been discussed in this study, the writer believes that they furnish a more suggestive series than would a small army of lesser literary lights. Therefore he has omitted from the study such types as Hurrell Froude, Richard Lovelace, George Herbert, John Addington Symonds, Westcott (the author of "David Harum"), "Artemus Ward," Maxim Gorky, Adelaide Ann Procter, Joseph Rodman Drake, Kirke White, E. P. Roe, N. P. Willis, George Ripley, Grace Aguilar, Stephen Crane, H. C. Bunner, John Sterling, Henry Timrod, Paul Laurence Dunbar, etc. Were these included we would be descending from the high realm of genius to the comparatively commonplace domain of talent, and while this would also serve our purpose in no small degree, it would result in what the writer suspects very few people ever read through, an apparently formidable treatise.

The author submits that the subjects whom he has studied comprise an extraordinarily significant galaxy of creative thinkers. Of special, peculiar and far-reaching import are their messages to mankind, taken in the aggregate.

That tuberculosis tends to occasion, in its victims, "peculiar characteristics, incompatible with success and useful labors," is a belief held by certain medical observers and philosophers. There is, of course, a large measure of truth in such a belief, for the shortening of life alone would, *apparently*, make for the cancelling of usefulness. Yet, if we take a large view of all cognate facts bearing upon the matter, we must conclude that the subject does not end here. Judging such facts in the Emersonian spirit, what a debt we owe to the many splendid characters who have been the victims of this disease! Does not this partially offset the economic loss? The tuberculous genius may have been useless from the standpoint of "Diamond Jim" Brady or of "Oily John," but

"From his dead lips a clearer note is born
Than ever Triton blew from wreathed horn"!

We may concede that tuberculosis does tend to unfit its victims for the *material* things of life, but we must, if we would strike a balance of truth, place over against this the fact that, in numberless instances, it has acted as a most potential factor in the excitation of certain minds of extraordinary intellectual endowment to more energetic output, the quality of which output has been distinctly enhanced. If it tends to unfit its victims for material success, so also does it tend to quicken and to inspire the intellect—a divine compensation. We may then, with truth, regard it as a “toad, ugly and venomous, which wears yet a precious jewel in his head.”

It is not alone the strenuous—in the ordinary, vulgar sense, who achieve great things. Not always is the race to the physically swift, the battle to the bodily strong. Above these, soaring toward the goal of human greatness, is an intellectual vanguard whose bodies are so weak, whose minds are so finely organized and so subtly stimulated, whose hold upon physical life is so feeble, that it is given to them, in superior degree, to soar upon the wings of fancy into other worlds where all is beauty and “the air is music, there to write down the cadences that they hear. And these cadences, though imperfect, become the songs and the literary gospel of the nations.” Men of common clay are but “the pans and the barrows or the porters of the fire”; our tuberculous geniuses “are children of the fire itself, made of it, and only the same divinity transmuted, and at two or three removes.”

PHYSICIANS AS CONTRIBUTORS TO BRITISH AND AMERICAN LITERATURE.*

BY MRS. JOHN E. SHEPPARD,

of Brooklyn, N. Y.

PHYSIANS too often are thought of as a class apart in the community, absorbed in their own profession and playing a small part in anything other than the development of the physical welfare of the people. As a matter of fact, however, many instances may be cited to show the important rôle which physicians have played in

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the affairs of state, and it easily may be demonstrated that the medical profession has gained its fair share of the laurels in the fields of Art, Science and Literature. To this last topic—the contributions of physicians to British and American literature—this paper is devoted. No attempt is made to give a complete record, but merely a brief account of a few of the physicians who have enriched general literature by their contributions.

British Literature.

Sir John Maundeville (1300-1372) is called by Taine, in his "History of English Literature," "the oldest prose writer, the Villehardouin of the country." The "Voyage and Tra-vaile of Sir John Maundeville" is an account of his trip to the Orient, and although written in old English, it is quaint and interesting. In his prologue he writes:

"And for als moche as it is longe time passed that ther was no generalle Passage ne Vyage over the See, and many Men desiren for to here speke of the holy Lond, and han thereof gret Solace and Comfort, I, John Maundeville, Knyght, alle be it I be not worthi, that was born in Englund, in the town of Seynt-Albones, passed the See in the Zeer of our Lord Jesu-Christ 1322, in the Day of Seynt Michelle, and hidreto have been longe tyme over the See, and have seyn and gon thorghe manye dyverse londes, and many Provynces, and Kingdomes, and Iles.

"And zee shulle undirstonde that I have put this Boke out of Latyn into Frensche, and translated it azen out of Frensche, into Englyssche, that every Man of my Nacioun may undirstonde it."

Though the style of this book is crude, the author's philosophy is good, even though the date is at the middle of the 14th century. It was the most popular book of its age and is an important monument of early English prose. His motive in composing the book was to afford pilgrims a guide to Jerusalem and the Holy Land. So he points out, in the first part, four ways to the holy city. In the second part he takes a wider range, traveling through Armenia, the land of Job, India, Java, and Cathay, describing the gardens, palace and throne of the Grand Khan, and the customs of the Tartars; then he tells of Media, Georgia, and the Land of Darkness; of twenty-two kings pent up between the mountains and the Caspian Sea, who will break forth in Anti-Christ's time; of the dominion of Prester John and his palace at Susa; of the Vale Perilous, the Devil's Head, and

the isles of Bragman and Taprobane. Sir John had no lack of imagination and he records marvels prodigious enough to satisfy even the craving of that childlike day; yet, as White says, that very interest in geography and the doings of strange folk in far-off lands was at once a sign and a means of a remarkable and imaginative awakening.

Details as to Sir John's life, and even the authenticity of some of his alleged travels, are matters of doubt. In the 16th century there was at Liège a tomb of a man said to be Maundeville, but the Latin inscription, stating that the tomb was his, and that he died at Liège on November 17, 1372, is not only apparently much later in style, but confounds him with a physician called "ad Barbam," who is said in a printed Latin edition of Maundeville to have met him first at Cairo and again at Liège and to have persuaded and helped him to write his travels. This physician is called in a French MS. "Jehan de Bourgoigne dit a la Barbe." The question has been asked, Can he also have written these travels under a feigned name?

Andrew Boorde (14??-1549) was an odd and whimsical character, esteemed in his time as a man of great wit and learning, and an excellent physician, in which latter capacity he is said to have served King Henry VIII. He was the author of several works; one was entitled "A Book of the Introduction of Knowledge" and professed to teach all kinds of languages; another was called "The Merry Tales of the Mad Men of Gotham," and likewise one entitled "The History of the Miller of Abingdon and the Cambridge Scholars." The first of his medical works, "The Breviarie of Health," was published in 1547, and Fuller supposes it to be the earliest medical piece written in English. From his habit of frequenting fairs and markets, where his humorous speeches made him popular with the masses, arose our term "merry Andrew" to designate the class of itinerant quacks who adopted his style.

Dr. Thomas Lodge (15?-1625) associated much with the poets of his day, and, as Wood says, "was esteemed the best for satyr among Englishmen." He took his degree of M.D. at Avignon. He was a very prolific writer and in 1590 wrote a novel which is the key to Shakespeare's "As You Like It." To this is attributed Greene's charge of plagiarism. In 1594 followed his play "The Wounds of a Civil War," and later

six other plays written in collaboration with Robert Greene. His "Treatise of the Plague," a medical work, was published in 1603. Lodge became a wealthy physician and succumbed to the plague which broke out in London, in the year 1625.

In the 17th century our research for this class of authors becomes richly rewarded. At that time England became enveloped in a literary atmosphere, probably to some extent due to the fact that Italy and the Italians were then in the throes of what is known as the "Renascence in Literature." In England it was the age which produced Shakespeare, Ben Jonson, Beaumont and Fletcher, Lord Bacon, Milton, and a host of lesser lights. It was the fashion to write; it was in the air. Men of learning who aspired to a higher position in society or in the professions had but to write a good poem and their success was assured. Medical science at that time was not mixed with Theology. The doctor and clergyman were then as distinct in their professional work as they are at the present time.

Let us review briefly the physicians of those days who were also contributors to general literature.

Arthur Johnson, M.D., was appointed to the court of Charles I. He wrote a number of Latin elegies and epigrams, and a collection of short poems. Besides these, he wrote a volume of poems on Scotland, his native country, which reflected great honor to the taste and scholarship of the Scottish nation.

Charles II had a court physician who pleased his royal highness greatly. This monarch was fond of men of wit. Not only were such to be found near the throne, but also in the clubs and coffee houses of "Ye Old Lonnon Town." *Dr. Walter Charlton* (1619-1707) became the king's favorite after he had written clever articles on the different wits. The doctor had a brilliant mind and a ready pen. His production was really a caricature of those who were known as court jesters. He also wrote on Zoology, Antiquities, and a Theology. While Physician in Ordinary to the Crown he was also President of the Royal College of Physicians of London, and until his death Dr. Charlton stood in high favor among the men of letters of his time. Wood characterizes him as "a learned and an unhappy man, aged and grave, yet much given to romances."

Sir Thomas Browne (1605-1682), a practicing physician, is too well known to need extended mention. His "*Religio Medici*" is considered one of the classics of English literature. Taine says of him:

"Let us conceive a kindred mind to Shakespeare's, a scholar and an observer instead of an actor and a poet.... Sir Thomas Browne, a naturalist, a philosopher, a scholar, a physician, and a moralist, almost the last of the generation which produced Jeremy Taylor and Shakespeare. No thinker bears stronger witness to the wandering and inventive curiosity of the age. No writer has better displayed the brilliant and sombre imagination of the North. No one has spoken with a more eloquent emotion of death, the vast night of forgetfulness, of the all-devouring pit, of human vanity, which tries to create an ephemeral immortality out of glory or sculptured stones. No one has revealed, in more glowing and original expressions, the poetic sap which flows through all the minds of the age."

Another physician to distinguish himself along literary lines was *Dr. Samuel Garth* (1660-1719), also a member of the Royal College of Physicians of London, and a man of high attainments in learning. Possessed of wealth, he gave freely to charity. The dispensaries were established by him for the poor of London, and because of this magnanimous act he gained the disfavor of some of his colleagues. This animosity gave Dr. Garth material for a mock heroic poem to which he gave the title of "*The Dispensary*." To use a term of to-day, it was "a howling success," and ran through three editions in a few months. Garth was a great friend of Pope who spoke of him as "the well-natured Garth." His poems and contributions to literature were many. Among them were the lines inscribed upon the drinking cups of the famous Kit Kat Club. These cups are still preserved.

We are told of the Scot that "there is no wit in him." However true this may be, *Dr. John Arbuthnot* (1658-1735), "aye frae the toon o' Aberdeen," and a Court physician, shows a great deal of brilliancy in many of his literary efforts, especially in his "*History of John Bull*." Dr. Arbuthnot was the pen creator of this august personage who lives and thrives to this day.

Dr. William Chamberlaine, an obscure physician of Shaftsbury, England, was, by Nature's rich endowment, a poet, but his life lines were cast far from the authors of his day so he

was forgotten for more than a century until Campbell, in 1819, discovered his poems. Many of his verses were published in Campbell's "Specimens of the Poets."

Many another of the medical profession of that time wrote song and story. During this period, they were not classified as wits, nor did they become Court physicians; among them were Henry Vaughn and Sir Richard Blackmore.

Dr. Vaughn was a poetic Welshman whose muse was sublime. His "Mount of Olives," "The Retreat," "The World," and "Beyond the Veil," will give the reader a glimpse into the soul of this man, and you will say it was a purified one. Such songs emanate from none other than the sanctified here below.

Sir Richard Blackmore (1650-1729) was a very voluminous and discursive writer, in prose and verse, on religion, history, and medicine. Addison and Johnson gave him great praise for his epic poems, of which there were seven, one of which was published in ten volumes.

Bernard de Mandeville, another celebrated writer of the 18th century, was born in Holland, where he took his medical degree. Afterwards he came over to England and wrote several books, all of them ingenious, but some of which are supposed to have had an ill effect upon society. He dropped into the hands of the Grand Jury of Middlesex in 1723 when he published his "The Fable of the Bees, or Private Vices made Public Benefits." However, the author soon after this published four other volumes which made people wince who sat in high places in "Merrie England."

A little later in English literature, we find that the spirit of the times made the satirist all the fashion. The wit, the poet, and the story writer had had their day, so the doctor who aspired to authorship must needs write in the prevailing vein.

John Armstrong (1709-1779) and *Mark Akenside* (1721-1770) were among the leaders in this line of writing. At this time a publisher went to Pope to get his opinion of a manuscript written by Akenside. After reading the poem, Pope said: "Offer him no niggardly price, for he is no everyday writer."

Robert Sibbald (1643-1712), *John Locke* (1632-1704), *Tobias Smollet* (1721-1771), *John Wolcot*, better known as

"Peter Pindar," *James Currie*, *Benjamin Hoadley* (1705-1757), *Oliver Goldsmith*, *John Moore*, the father of General Sir John Moore, and a host of lesser lights in the medical contingent of writers, are scattered along down through the literary leaves of time. To the above mentioned we must add the names of *William Coward* (16?-1725), *Nathaniel Cotton*, and *John Hill*, who was a voluminous writer, which, perhaps, is his principal recommendation. Of him it was written,

"For physics and farces, his equal there scarce is;
His farces a physics is, his physics a farce is."

Dr. John Abercrombie (1780-1844), although a busy physician and surgeon of Aberdeen, Scotland, wrote much in his time. His "The Intellectual Powers of Man," and "The Philosophy of the Moral Feelings," are standard works of great strength. This author opposed the doctrine of Materialism.

John Aikin (1747-1822) found writing so much more to his taste than the practice of medicine that he gave up the latter and became a prolific writer. However, his "Evenings at Home" was written while practicing as an apprentice, so-called. Aye, John, were you a present-day physician practicing in a great city, your knowledge of evenings at home, undisturbed, would be quite limited!

Smollet wrote beautifully, when he wrote out of the sympathy of his heart, concerning the Battle of Flodden, and he gave to the world of letters his masterpiece in the poem "Scotland's Tears."

Oliver Goldsmith (1728-1774), a son of Erin's green isle, inheriting from her sons their beautiful sentimentality and some of their weakness, mixed with a poetic temperament, was manifestly often filled to overflowing. Between whiles, he practiced medicine, worked for a London druggist, and became a much-traveled man in those days when tramping was not so common as it is now. Recognition as a writer gave him a living in later life, although the "Vicar of Wakefield" was two years in the printer's hands before it was published.

Of *Dr. John Moore* (1730-1802) it is said that his writings influenced the works of Lord Byron.

Dr. George Crabbe (1754-1832), of whom Byron said, "Nature's sternest painter, yet the best," was the poet of the

poor and lowly. He received three thousand pounds for his "Tale of the Hall." After this and other successful productions, he practiced medicine only among the poor, from whom he took no pay for his tender care.

And now let us glance at *John Leyden* (1775-1811), a ready writer and a great educator. He was sent by the British government out to India, in the interests of England to feel her way into the heart of India, to learn if it were possible to transplant Western civilization to any great extent, and of course, Western methods of education. Of this writer, let us quote Erskine who said, "Dr. Leyden, during his eight years in India, did as much for that country as the combined scholarships had done for Europe in a century." During his sojourn in India Dr. Leyden wrote many poems; his "Ode to Scotland" is said to be his best.

Dr. Joseph Henry Green (1791-1863) we must speak of, in passing. A man of letters himself, he became the literary executor of the great Coleridge.

Dr. Erasmus Darwin (1731-1802), grandfather of Charles Darwin, was a great student of nature. He wrote much, and it is said that some of his books gave rise to Charles Darwin's "Theory of Evolution."

Dr. John Wolcot (1738-1819) belonged to the satirists of the eighteenth century. He it was who made George III ridiculous in one instance by making him inquire how the apple ever got into the dumpling.

Dr. James Currie (1756-1805) found out that it was unwise to ridicule his own countrymen, even the peasantry. He wrote a great many stories, but one of his more weighty works of literature, entitled the "Character and Conditions of the Scottish Peasantry," brought him into disfavor, for the truth sometimes hits hard. Currie's book, was a true picture of character and conditions, throwing a strong light upon them. Sarah Pratt Greene did not win the love of the humble people of Cape Cod when she wrote "Cape Cod Folks." Conditions ridiculed and characteristics magnified are not always flattering to a race of people.

Dr. John Nicol was a Scotsman and a writer of more recent date, whose works differ widely in character and style. One of his books is devoted to the criticism of American literature, which, if read by an American, would not make

him feel proud of his countrymen authors. But Dr. Nicol's criticisms were of the early days of American writers when the books written by the Puritan fathers were as stern and dry as were the countenances of those who wrote them.

Dr. Mungo Park gave to the world historical data when he wrote his "Journeys in Africa." He was the first among modern Europeans who had the distinction of tracing the Niger River to its source. Great indeed were the courage and endurance of Dr. Park. When Sir Walter Scott expressed great surprise at his preparations for a second expedition, Dr. Park's answer was, "I would rather brave Africa and all its horrors than to pursue the practice of medicine in the Highlands of Scotland."

Of that other great African explorer, *Dr. David Livingstone*, we need say but little concerning what he wrote. He is not in song and story, but will live forever in the pages of history, and in the records of Christianity.

Dr. Samuel Smiles, of euphonious name at least, is best known for his "Self Help" and the "Life of the Huguenots."

Dr. David Macbeth wrote a number of books on biography and other standard works. He also produced at least one beautiful poem, on the death of a little son, which affliction rendered the father almost helpless for a time. The pathos of this memoir is sweet and tender, having a depth of sincerity in it.

What need we say concerning the author of "Rab and His Friends," and of "Marjorie Fleming?" Few men have written as did *Dr. John Brown*, who needs no introduction as a story writer. He made many contributions to the literature of his day, and every line from this author's pen is well worth reading. It will not be a waste of time, even if you have to do with a little less sleep—read John Brown's books.

Dr. Donald Ross, sometime an English army surgeon, while living practically in exile in India, recently suffered all the discomforts of that climate while making a scientific research concerning the relation of the mosquito to malarial diseases. His life, during this period, meant daily sacrifice, and yet, in order to get rest and change, we find a book of verse has been composed by him, so excellent in quality that such a man as Dr. S. Weir Mitchell, in writing an address

upon this medical scientist and his verse, says of one of the descriptive poems, "It is so told, it grieves me that I cannot quote all of it."

Perhaps *Sir Arthur Conan Doyle* owes much of his literary ability to his Irish ancestry, but we are very often led to think of him as a Scotch Irishman. He was born in Edinburgh where he studied medicine, and later practiced in that city and in London. He is well known as a novelist.

But if we turn back to an earlier date, we find a physician of true Irish birth and education whose writings are more voluminous than those of the author of "Sherlock Holmes." Twenty-five successful novels were written and published by *Dr. Charles James Lever* (1809-1872). His last book, "Lord Kilgobbin," was published in 1872. From the first to the last of his books, there is not an uninteresting one, and his verses are full of native wit and rollicking romance.

We have by no means exhausted the list, but now let us turn from our review of British physicians who have been writers, to their American cousins.

(To be concluded.)

THE MEDICAL LIBRARY AND ITS CONTENTS.*

BY JOHN W. FARLOW, M.D.,

Librarian of the Boston Medical Library, Boston, Mass.



THE kind invitation to address you this evening brings to me the very vivid impression that I have but very little of interest to say to you. I shall, however, avail myself of the thought that those who are interested in the same thing are, or may be, interested in each other; and I may certainly take it for granted that we are all interested in getting together the medical literature of the world and housing it in such quarters and in such ways that it will be available for the pleasure and profit of all who wish to consult it. We have only to contemplate what a tremendous loss it would be to the medical profession of New York if this beautiful Library and that of the New York Academy of Medicine were destroyed by fire, to recognize that the gathering together and safe-guarding of these valuable collections are of paramount interest to the whole community. To the student, the recent graduate, the busy practitioner, to all, these libraries furnish the means of knowing what has been thought and done by the great Masters of Medicine in the past and also the very latest theories, suggestions and experiments from the hospitals and laboratories all over the world.

The Medical Library has, in many ways, a very different purpose to fulfill from the Law Library. This fact was brought forcibly to my notice by a visit to the Harvard Law School in Cambridge. I was anxious to learn something of the workings of the so-called "Case System," now very much in favor, and for that reason I attended some of the lectures of the Law School. The student, called upon by the professor to discuss a given case before the class, often cited references and quoted authorities dating from several centuries ago, the underlying principles having continued to be of great influence up to the present time. Decisions of last year or last month seemed to be of no importance unless they harmonized with what had been held true for many years.

* Address before the Medical Society of the County of Kings, Brooklyn, N. Y., April 21, 1908.

In the Law Library I asked to be shown the files of current periodicals, hoping to see evidence of recent activity of thought, of change, but I failed to find more than a meagre number of journals, and these seemed to be considered of no particular importance. When I compared this with the hundreds of journals which the large Medical Library is obliged to take, and when I recalled how eager our readers are to have the very latest journals, even requesting that they come by the fastest European steamers, and often asking to consult them before there has been time to collate and catalogue them, I was impressed with the great differences in the character of the literature of the two professions; the law student seemed to judge the present by the past, the medical student to ignore the past and reach out into the future.

In this search after new facts there has been a great tendency to neglect the underlying truths which have existed in medicine for centuries. The study of the history of medicine has received but scant attention, not at all what it deserves. In very few medical schools is any such instruction given, the already crowded curriculum being alleged as the reason. There has recently, however, been shown much greater interest in the subject, and a number of periodicals devoted to this most important subject have lately appeared. Our Libraries should, and many do, contain valuable material for such study, and it should be their special province to gather together all that relates to local medical history and biography. It is astonishing how difficult it is to find any but the most meagre details of the lives of the medical men of this country. The work that Dr. H. A. Kelly is doing in that direction should prove of great value. The Library should make a special point of medical history and biography and should have a collection of portraits of medical men and a card catalogue showing in what book, journal or pamphlet such portraits can be found.

Some of the most important literature in modern medicine appears in the form of monographs and theses in German or French, and these can generally be consulted only in the original. In this country, the monograph has had but a very small place owing to the difficulties and expense of publication; but since the establishment of the Carnegie, Rockefeller and other Institutions and the greater attention paid by our large universities to post-graduate and other higher branches of education, we are beginning to get in our Libraries very worthy rivals of what we

had always been obliged to look for in Europe. I am very glad to learn that the *Journal of Nervous and Mental Diseases* is making arrangements for the publication of a series of similar articles in this country. The cost of making plates for the illustration of scientific articles has always been much higher here than in Europe, but the recent advances in photography have brought about most excellent results at much lower prices.

In England the Sydenham Society felt the importance of bringing this kind of foreign literature to the service of English readers and published a long series of translations of the most important works; but in the progress of English scientific medicine, and with the establishment of laboratories and institutions of research, the need of such publications apparently no longer exists, and the Society is contemplating giving up its work in that direction.

A point which a large collection of valuable monographs, theses and periodicals brings to the front, is the importance to the consulter of such literature of a good reading knowledge of French and German. I often hear it said that it is no longer necessary to go to Europe for a good training in medicine, because the education to be obtained here at our best universities is as good as can be obtained in any other country. Without discussing the merits of such a statement, it is certainly not open to question that the recent graduate who adds to his strictly medical training the ability to read the scientific articles that appear in the periodicals and transactions published in Paris, Berlin, Munich, Vienna and the accounts of the work done in the anatomical, pathological and pharmaceutical institutions of France and Germany must certainly be much better able to keep in close touch with great thinkers of the medical world than the one to whom this great mass of knowledge is available only through incomplete abstracts or delayed and faulty translations. Those of you who have seen some cherished article, to the preparation of which you have devoted much time and thought, bandied about from one journal to another, abstracted, and translated into a foreign language, will appreciate how far the final product is from what issued from your own brain. It has always seemed to me advisable that the recent graduate should, if possible, before going into practice, take a vacation of several months, go to Germany and France, and spend the time in acquiring in the country such a knowledge of the language as will convince him at least that these are not dead languages, like Greek or Latin, but are very much alive.

Since about 1880 there have been started in this country a great number of National and Special Societies, whose proceedings are very important for a library to possess. Some of the best American work appears in these volumes. The transactions of the National and International Congresses are also filled with very valuable material and libraries should make a special point to get complete sets of all of them.

There is much use made of the *Centralblätter*, or abstracts of all that is published in the various divisions of medicine. As a new subject assumes importance or tends to become differentiated from some other, its own *Centralblatt* appears.

The text book, soon out of date, with its revisions and new editions striving to keep up with the procession, is generally spoken of by librarians in a very disparaging way, but I feel that it is somewhat maligned. It is much used, not only by the student but also by the practitioner, and although much of it may be mere compilation, still, in many ways it represents the experiences of every day practice and, if carefully and honestly thought out, has a definite, even if an ephemeral value. Their disadvantages are that they are generally bulky, are soon antiquated, cost money which would be better spent for works of more permanent value, and the numerous editions take up much needed room on the shelves. Still, I think there is very much truth in a sympathetic editorial which appeared in the *Boston Medical and Surgical Journal* for November 7, 1907. It closes with these words: "There is no question that the estimate of a book at the hands of an expert in the subject under consideration would be far different from that of the practitioner, who, in the endless details of his practice, is eager for a clear and even commonplace presentation of the subject. Much illiberality in the reviewing of books is apparent. They are dismissed often with a few words and with the insistence on the fact that they are superfluous. It would be well to recognize the palpable fact that what is superfluous for one man is a necessity for another, and that many text-books are good just in proportion to the number of physicians they benefit. For our part we welcome new books, recognizing that some of them are excellent and most of them useful. We are strongly disinclined to condemn a book simply because it is a repetition of what has already been said; on the contrary, every encouragement should be offered to writers of books, in the hope that ultimately results will appear which could be obtained by no means requiring less active competition."

I do not need to emphasize the importance to the library of its periodicals. They are universally recognized as the backbone of its collections, and every effort should be made to have as complete sets as possible. There is, however, great difficulty in securing missing numbers of most American journals. There are but very few second-hand dealers here who make any point of medical literature and issue catalogues. In fact it is much easier to secure odd numbers and parts of sets of foreign journals by ordering of European dealers, than it is to get here the missing numbers of many of our own journals.

I sincerely trust that the great increase in the number of medical libraries which has taken place in the United States in the last few years will stimulate the second-hand dealers in all the large cities, to collect, arrange and catalogue the great mass of American medical periodicals which are now so often turned over to the waste paper man. The cost of sending such material long distances makes it important that there should be places in all parts of the country for dealing in these odds and ends which physicians, publishers and libraries may have to dispose of.

A Medical Library should endeavor to have as many bibliographies as possible, for they are of great service as time savers when looking up any given subject, but only when they are carefully compiled and verified. I have thought that the proof reading of references, especially of those to a foreign language, is not carefully enough attended to, an explanation, but not an excuse, being that they are in small type, much abbreviated and have accents and marks not used in English. It is most advisable to make use of the abbreviations employed in the *Index Catalogue of the Surgeon-General's Library*.

I would like to say a few words in regard to the most valuable medical reference work that exists, whose place no substitute has been able to fill, a universal helper in all countries and in all languages. I refer, of course, to the *Index Medicus*, the monument of Dr. J. S. Billings, for which he deserves the gratitude of the entire medical and scientific world. Its only drawback is the frequent intimation that its publication may be suspended from lack of support by the medical profession. For twenty years it was of the greatest possible value, then came a gap of four years when we were all at sea, and the literature of those years is to a certain extent buried, with no key to its hiding place.

In order for the *Index Medicus* to be of substantial service to the physician, he must have access to the libraries which contain

the books and journals referred to. This limits its use to those who live in or near large cities. The doctor's library is generally made up of a few standard text-books and some of the important journals in English. If a specialist, he may have a fairly complete list of the current literature on his own subject, but nothing more, and he soon learns that many references even to special subjects are to be found in general treatises or journals, so that the specialist as well as nearly every general practitioner is obliged to go to the Medical Library for his references, and there he finds the *Index Medicus*, perhaps several copies. If he finds at the Library what he needs and what he cannot use at home he naturally does not subscribe to the *Index Medicus*. This leaves as subscribers Medical, Scientific and some General Libraries and those physicians who from loyalty or public spirit are glad to contribute toward the support of what they consider to be of inestimable value to the profession as a whole. The number of these individual subscribers we are told is not large enough to prevent a great part of the expense of publication falling upon the Carnegie Institution. We are all sorry to admit this fact, but can we not urge upon the Carnegie Trustees that there is nothing they can do with the funds at their disposal of more value to the medical profession than the making possible the continued existence of this most helpful journal? The research work which they encourage in all parts of the country is facilitated to a considerable extent by the references to other research work found in the *Index Medicus*. The machinery for publication is established and material is continually pouring into Washington. Can the trustees do a greater amount of good with the money which they are obliged to spend each year for its benefit? The medical profession is not unappreciative of its value; on the contrary, they recognize it fully, but for various reasons, some of which I have mentioned, they, most unfortunately, do not come to its aid as they most assuredly ought to.

I have occasionally received letters asking as to the advisability of having a medical library a branch of a general library. I do not think it at all desirable, because medical books and journals are of such a nature that they are not of general interest and special regulations have to be made for their consultation. Consequently appropriations for the purchase of such books are grudgingly made, and, as the general library grows, the medical department is sure to suffer and is considered rather of an incu-

bus. It is better for the doctors to have their own quarters and manage their own literature, even if at first the progress seems slow.

Judging from my own experience, I should say that the tendency of libraries in a city is to recognize the most prosperous and active medical library as the proper one to be the custodian of all their medical literature, and to this library they gradually send their medical collections. This is for the benefit of both parties. As an illustration of this let me refer to an article by Mr. Huntington in the *Medical Library and Historical Journal*, Vol. 2, 1904, on "The Medical Library Movement in the United States." In a list of medical libraries in the different cities he gives as those of Boston:

| | |
|----------------------------------|-------------|
| 1 Boston Athenaeum Medical Dept. | 1,500 vols. |
| 2 Boston City Hospital | 3,746 " |
| 3 Boston Medical Library | 35,000 " |
| 4 College Physicians & Surgeons, | 500 " |
| 5 Massachusetts General Hospital | 6,000 " |
| 6 Boston Public Library | 20,235 " |
| 7 State Board of Health | 3,500 " |
| 8 Tufts College Medical School | 675 " |
| 9 Harvard Medical School | 2,279 " |

Let us look at the status at the present time. The following have deposited their medical books in the Boston Medical Library:

Boston Society for Medical Improvement.
 Boston Society for Medical Observation.
 Boston Dispensary.
 Gynecological Society of Boston.
 Roxbury Athenaeum.
 Boston Athenaeum.
 Harvard Medical School.
 Harvard University.
 Cambridge Public Library.
 Tufts College Medical School.
 Waltham Public Library.
 Boston Public Library.

Some books have also been received from the City Hospital and the Board of Health, thus leaving practically merely the working libraries necessary for the large hospitals and the department collections of the Medical Schools.

Those who take an interest in medical literature and have the facilities for caring for it are the ones who should be entrusted with the charge of large collections of such works. Physicians and surgeons who have been connected with hospitals often leave their books to the hospital library. This seems to me to be much less desirable than that they should give their books, and especially their monographs and pamphlets, to the large library, which is open to all. The hospital library is necessarily small, is private and can grow only by discarding its older books.

As medicine assumes a more scientific basis the librarian has to add to his already large list of periodicals many that had hitherto been considered as having a place only in general or scientific collections. The term "biology" has come to have a very important and practical relation to medicine, and is no longer the sole property of the botanist and zoologist. In fact, the Boston Medical Library receives occasional calls from students of the Museum of Comparative Zoology in Cambridge for books and journals which a few years ago would have been considered quite outside the scope of a medical library. The development of mental science and psychology has brought with it the important question of deciding how far the medical library should go in the purchase of books treating on these subjects. The border line between them and medicine is surely changing very rapidly, and the neurological student is presenting his list of references which encroach more and more on what was recently thought to be pure psychology without practical medical bearing.

The former alleged antagonism between science and religion has certainly received some hard knocks of late, and the various forms of faith cure, Christian science, mental healing and psychotherapy, have compelled the librarian to add works on these subjects to his already crowded shelves. The recent appearance of such a journal as the *Zeitschrift für Religions-Psychologie* (the borderland between Theology and Medicine) shows that this matter is receiving, and will continue to receive, serious consideration in medical literature.

The interest in Tropical Medicine has resulted in adding an almost entirely new section to the library, and the Transactions of the Laboratories which make a special study of such diseases, and the journals dealing with the subject, are of great value. Works on comparative anatomy, physiology and pathology are acquiring a very important position on account of the development of bacteriology and the more scientific study of disease and

health in a broad way. Books on veterinary medicine which were formerly supposed to be of interest to no one except the horse doctor, redolent of the stable, are now called for by the students of scientific medicine.

Where all these expansions and branchings out will lead to or where they will end is a very difficult question to answer. It would seem that, although medical literature is being gradually turned out of the General Library, it is progressing in so many directions that it is assuming a much more extensive relation to the community at large than ever before and is less restricted to practitioners of medicine. This fact imposes on the Medical Library the duty of opening its rooms, under certain restrictions, to the general, non-medical public; it means a much greater use of its books, a much larger interest in its success and consequently a more important position in the educational world.

All this increased growth requires more money for books and still more for cataloging and maintenance; but money is not all that is needed in order to add to the value of a library. There is a great mass of material relating to medicine which never comes into the market at all, but which could fill a very important place. Every physician has in his possession pamphlets, newspaper clippings, photographs of medical men, medical schools and buildings, biographical notes, autographs, etc., which are either soon thrown away or become destroyed by improper care. Numbers of out of the way journals are consigned to the junk dealer as old paper without a thought that they may be just what is wanted to fill a gap in a set at the library. It is better to send all such miscellaneous material to the library and let the librarian be the judge of what is of value. It may be that the copy of a book or journal which the library possesses is incomplete, some pages or the index may be missing, and the book sent in may replace the imperfect volumes on the library shelves.

There is another point which I would like to mention and that is the advisability of the doctor's giving to the library during his life the books and journals which he wishes to contribute rather than deciding to leave them after his death. Very possibly nothing definite is said in his will about the disposition of his medical books, and his library is scattered or falls into the hands of those who have not the same interest in giving to the library that he had. If, on the other hand, he places in a library, during his life, such books as his interest and generosity dictate, he can at any time have all the use of them that he wishes, and

they are accessible as well to his medical confreres, who will be impressed with his generosity and perhaps be led to follow his example.

I am glad to speak of the action of the Boston Orthopedic Club. They have made an arrangement with the Boston Medical Library by which they get together all the monographs, theses, reprints, etc., on orthopedics which they can and deposit them in the Library. They have also added a large collection of X-ray plates. They furnish references and make suggestions to the Librarian in regard to the purchase of books, and one of their number has given a sum of money with which to buy foreign theses.

In these days, when the younger men of the profession are showing great activity in all the different specialties, I feel that the example of the Orthopedic Club needs only to be mentioned in order to be followed by similar clubs interested in other branches of medicine.

I have endeavored to point out to you some of the many directions in which the Medical Library is developing and how it is coming more and more to be an important factor in aiding the general welfare of the community. It is growing away from the narrow confines of the mere practice of medicine and is occupying a much broader field. It should endeavor to furnish to its readers the newest and the latest in medicine, but it should not forget that the present depends upon the past and not upon the future, and should make very earnest effort to secure what relates to medical men and matters of times gone by. The active co-operation of the medical men of the community is a great factor in helping the Library to supply whatever sort of medical knowledge is demanded of it.

TRANSACTIONS OF THE ST. LOUIS MEDICAL HISTORY CLUB.

STATED MEETING, JANUARY 23, 1908.

The St. Louis Medical History Club met on Thursday evening, January 23, 1908. Dr. Warren B. Outten was elected temporary Chairman. The following members were present: Drs. H. N. Spencer, F. J. Lutz, H. M. Whelpley, L. M. Warfield, M. B. Clopton, C. D. Stevens, George Homan, A. E. Taussig, J. J. Houwink, A. C. Eycleshymer, Joseph Grindon, and N. Allison.

Dr. George Homan presented a medical report on the earthquake at Valparaiso, Chili, entitled "Servicio Medico de un Terremoto," written by Dr. Jose Grossi. This report contains a detailed description of the injuries caused by the earthquake. Dr. Homan said that he had seen in a recent letter of Nicholas Senn a statement that medical affairs in Chili were at a low ebb. This he feels inclined to disbelieve inasmuch as the present report shows very careful medical observation. Dr. F. J. Lutz stated that a review or translation of this report will be of great value. He called the Club's attention to the fact that there has been as yet no published record of the injuries caused by the St. Louis cyclone in 1896.

Program.

Dr. M. G. Seelig read a paper entitled "Geography and Medicine" (*see* p. 9) in which the course taken by Greek medicine in its spread to Egypt and Italy was described. This paper proved of absorbing interest and brought forth a corresponding discussion.

Dr. L. M. Warfield read a paper entitled "The History of Anti-tuberculosis Crusade," which gave a very attractive review of what has been done by various governments and peoples toward abolition of the white plague.

ANNUAL MEETING, MARCH 26, 1908.

The second annual meeting of the St. Louis Medical History Club was held on Thursday evening, March 26, 1908, at the Medical Library Building. The following members were present: Drs. Otho Ball, L. C. Boisliniere, John Duncan, Joseph Grindon, W. A. Hardaway, J. J. Houwink, George Homan, Gustavus Hinrichs, F. J. Lutz, W. Leighton, W. B. Outten, C. D. Stevens,

A. J. Steele, R. L. Thompson and N. Allison. Dr. W. B. Outten was elected temporary Chairman and the meeting was called to order at 8.45 P. M.

Secretary's Report.

The Secretary made the following report :

Honorary Members, 2; Wm. Osler, Oxford, England, and Julius Pagel, Berlin.

Corresponding Members, 1; Kenneth W. Millican, Chicago, Ill.

Active Members, 55; N. Allison, A. Alt, J. M. Ball, Otho Ball, G. Baumgarten, Walter Baumgarten, L. C. Boisliniere, O. H. Campbell, C. G. Chaddock, M. B. Clopton, J. R. Clemens, P. D. Connolly, W. B. Dorsett, J. H. Duncan, G. S. Drake, J. O'F. Delany, A. C. Eycleshymer, W. E. Fischel, Jacob Friedman, Joseph Grindon, W. A. Hardaway, Carl Hinrichs, Gustavus Hinrichs, George Homan, T. A. Hopkins, J. J. Houwink, D. L. Harris, Wm. Leighton, F. J. Lutz, E. P. Lyon, Kenneth W. Millican, Jesse Myer, H. G. Mudd, B. W. Moore, W. B. Outten, Elsworth Smith, Robt. Schlueter, Henry Schwarz, H. N. Spencer, M. G. Seelig, Greenfield Sluder, A. J. Steele, C. D. Stevens, C. D. Scott, Philip Skrainka, F. J. Taussig, A. E. Taussig, R. J. Terry, H. Tuholske, G. M. Tuttle, B. L. Thorpe, R. L. Thompson, Otto Wall, L. M. Warfield, and H. M. Whelpley.

During the past year the Club has held nine regular meetings, at which the following papers have been presented: "Early Vaccinators," by W. A. Hardaway; "Life and Works of Bichat," by A. C. Eycleshymer; Biographical sketches of Joseph Nash McDowell, Charles Pope, J. B. Johnson, Hammar, C. W. Stevens and others, by W. B. Outten; "Early Medical Journalism," by Otho Ball; "The Prescription," by O. A. Wall; "Andreas Vesalius," by J. M. Ball; "The Renaissance of Medicine," by Jos. Grindon; "Dale's Pharmacology," by O. A. Wall; "History of Mole-Pregnancy," by F. J. Taussig; "Geography and Medicine," by M. G. Seelig; "The History of Anti-tuberculosis Crusade," by L. M. Warfield; "Pre-Columbian Cranial Surgery," by H. M. Whelpley, and "William Thompson's Poem on Small-Pox," by Joseph Grindon.

The Club has held one public meeting under the auspices of the St. Louis Medical Society, on March 7, 1908, which was well attended and at which the following papers were read: "Some Lessons from Medical History," by J. M. Ball; "J. Ignace Guil-

lotin," a biographical sketch by F. J. Lutz; "Glimpses of Early St. Louis Medical History," by W. B. Outten; and "Pre-Columbian Cranial Surgery," with lantern-slide demonstrations, by H. M. Whelpley.

In the rooms of the library building a creditable display of old medical books, prints and instruments was made at this time.

The general interest aroused by this meeting in medical history was gratifying to all concerned.

The work done by the St. Louis Medical History Club, since its organization, has been of two classes. Formal papers have been presented which have been published in medical journals and which have been the principal numbers on the programs at the meetings. Aside from these much has come up at the meetings of the Club of an informal character that has proved most interesting. Old books, manuscripts and reminiscences, as well as prints have been shown in increasing numbers, indicating a marked interest by the members in local as well as general medical history. The Club has gained possession of numerous manuscripts and medical works which are kept in the library building and may be inspected at any time by the members.

Annual Election.

Dr. Nathaniel Allison was elected Secretary and Treasurer for the coming year.

Program.

Dr. George Homan read a very interesting paper, entitled "Prof. A. Harnak's Luke the Physician" (*see p. 1*).

STATED MEETING, APRIL 23, 1908.

The St. Louis Medical History Club met at the Library Building on Thursday evening, April 23, 1908. The meeting was called to order at 8.45 P. M. Dr. John Duncan was elected to the Chair. The members present were: Drs. Hardaway, Joseph Grindon, Gustavus Hinrichs, Carl Hinrichs, W. B. Outten, F. J. Lutz, Stevens, Boisliniere, J. J. Houwink and N. Allison.

Minutes of the last meeting were read and approved.

Reports of Committees: Dr. Lutz, chairman of a committee on revision of rules requested the secretary to read the rules presented by his committee at the last meeting. This was done and the following rules for membership were adopted:

I. Members who have never paid dues and who have never attended a meeting shall be dropped from the Club's roll.

II. All members who have paid dues but who have never attended a meeting shall be asked by the Secretary whether or no they wish to continue membership.

III. From date those desiring membership shall make written application on a blank card printed for this purpose which is to be endorsed by two members, sent to the Secretary and acted upon at the next regular meeting after the one at which the name is presented.

The Secretary stated that a paper had been written for the Club by Dr. Milne, of Hartlepool, England, entitled, "The Apparatus used by the Greeks and Romans in the Setting of Fractures and the Reduction of Dislocations," which is profusely illustrated; the illustrations requiring a lantern for their exhibition. He stated that the program committee had considered the matter and decided that the Club had best hold its next meeting in the amphitheater at the Washington University Medical Department, 1806 Locust Street, using the epidiascope for the presentation of this paper. This would be also convenient, as Dr. H. N. Spencer is to read an illustrated paper on "The Panama Canal." It was moved and seconded that the Secretary be a committee of one to make arrangements with the faculty of the Washington University Medical Department for this meeting.

The Secretary also called the attention of the Club to the fact that various graduating exercises and society meetings would interfere with our next meeting were it held on the regular date, and suggested that the date be changed to May 23d, Saturday evening. This was carried by vote.

Five Minute Talks.

Dr. Houwink presented a pair of spectacles four hundred years old, found in a church crypt in England. He also exhibited a print, dated 1798, showing the use of bifocal lenses at that time. He also made some interesting remarks on the subject of spectacles.

Dr. Outten presented the Club with a book entitled "A Treatise on the Operation of Surgery with a Definition and Representation of the Instruments used in Performing them," by Samuel Sharp, London, 1758.

Dr. Lutz exhibited a book which had been given to the Medical Library Association by Mr. W. K. Bixby of this city, entitled "Hamilton's Itinerarium," being a narrative of a journey from Annapolis, Md., to New Hampshire, 1744, edited by Professor A. B. Hart and published for private distribution by Mr. Bixby.

Program.

Dr. Gustavus Hinrichs read an interesting illustrated paper entitled "The Bartholins, Danish Physicians from the 16th to the 18th Centuries."

Motion to adjourn at 11.00 P. M.

NATHANIEL ALLISON, *Secretary.*

STATED MEETING, NOVEMBER 19, 1908.

The St. Louis Medical History Club met at the Medical Library Building, 3525 Pine Street, Thursday evening, November 19, 1908. Dr. George Homan was elected temporary Chairman. Members present: Drs. J. M. Ball, L. C. Boislaniere, M. B. Clapton, Joseph Grindon, George Homan, J. J. Houwink, Carl Hinrichs, F. J. Lutz, E. P. Lyon, Robert Schlueter, Jesse Myer, Greenfield Sluder, M. G. Seelig, C. D. Scott, R. L. Thompson, Spencer, H. Tuholske, Otto Wall and Allison.

The Secretary read a communication from Dr. John S. Milne, of Hartlepool, England, thanking the Club for his election as a corresponding member, and desiring the Secretary to publish the paper written by him entitled, "The Apparatus used by the Greeks and Romans in the Setting of Fractures and the Reduction of Dislocations" in whatever journal the Club should desire to have it published.

Five Minute Talks.

The attention of the Club was called to the beautiful picture donated by the mother of the late Dr. Wm. H. Bartscher which is hung in the rooms where the Club holds its meetings. This is a reproduction of the painting by Poynter of the Royal Academy, entitled "At the Shrine of Aesculapius."

Dr. Homan presented the Club with a bronze medal cast for the International Congress of Tuberculosis which met at Washington this Fall.

Program.

Dr. Lutz made a most interesting talk on "A Day in Leyden," and exhibited a number of prints and valuable books which he collected during a recent visit to that city. A list of these are as follows:

The Commentaria in Hippocratem de Capitis Vulneribus and the Explications C. Celsi in aliquot capita libri VIII, by Pieter Paaw, the first professor of Anatomy in the University of Leiden. 1616.

Vesalius. De humani corporis fabrica libri septem. Basil. 1543. fol. Max.

The "Vesalii Opera Omnia Anatomica et Chirurgica" cura Hermannii Boerhaave et Bernhardi Siegfried Albini. Tom. I. II. Lugd. Batavorum, 1725. fol. Max.

He pointed out that copper plates done by Jan Wandelaer in the size of the first edition had taken the place of the wood cuts. The title page is engraved in imitation of the edition of 1542; the monogram of Johann Oporinus the Basle publisher has been omitted and the architecture has been slightly changed.

The Leyden edition does not contain the "Epistola docens venam axillarem dextri cubiti" etc., nor the six plates published in 1538.

Of the other works there is reproduced: "De radice Chynæ" and the "Epistola ad Jacobum Sylvium"; the Observationes Anatomicæ Gabrielis Falloppii directed against Vesalius, as well as his answer the "Examen"; together with the "Examen" Apologiæ Francisci Putei pro Galeno in Anatome, which Vesalius wrote under the *nom de plume* of Gabrielis Cunei.

The volume closes with the alleged "Chirurgica Magna," edited by Prospero Borguratio.

Eustachii Bartholomei. Explicato Tabularum Anatomicarum, by B. S. Albinus. Leiden. 1744. fol. max.

By his additions to the text and illustrations Albinus added greatly to the value of this work of Eustachius. Accompanying each plate is an explanatory plate.

Albini, B. S. Tabulæ Ossium Humanorum. Leidæ, 1753. fol. max. Tabulæ VII uteri mulieris gravidæ. 1748.

Tabularum uteri mulieris gravidæ appendix. 1751.

Tabula vasis chyli ferri cum vena azyga, arteriis intercostalibus, aliisque vicinis partibus. 1757.

He showed William Hunter's plates of the gravid uterus, published at Birmingham in 1774, and compared them with those of Albinus.

Camperi, Petri. Icones Herniarum. Editæ Scæmmering. Francofurti ad Mœnam. 1801.

Camperi, Petri. Demonstrationum Anatomica Pathologicarum Liber Primus. Brachii Humani Fabricam et Morbos. Amstelodami, 1760.

Copper Plate Picture of Boerhaave by Wandelaer. Copper Plate Picture of Peter Camper.

Dr. J. M. Ball presented informally a history which he is now engaged in writing of the Humboldt Institute and the Humboldt Medical Schools of St. Louis. This proved most interesting and many of the members talked of their personal recollections of Dr. Hammer the founder of these institutions.

Adjournment at 11.35 P. M.

NATHANIEL ALLISON, *Secretary*.

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EDITORIAL.

"THE ÆSCULAPIAN."



IN January, 1903, was issued the first number of the *Medical Library and Historical Journal*, and the last number published was that for December, 1907 (Vol. 5, No. 4). The long and cumbersome title was the subject of some criticism at the outset, and the desirability of a shorter title was felt throughout the five years' publication of THE ÆSCULAPIAN's predecessor.

After the lapse of nearly a year, the first number of THE ÆSCULAPIAN is issued, retaining all the essential features of the *Medical Library and Historical Journal*. Prompt quarterly publication during the months of December, March, June and September may be expected, and we bespeak for the new the same cordial support that was accorded the old.

THE REPUBLICATION OF AMERICAN MEDICAL CLASSICS.

Our correspondent's letter concerning the subject of reprints of American medical classics, published on page 62 of this number of the journal, brings up for discussion a subject of interest. His plea is that there should be accessible to the student of medical literature inexpensive reprints of the medical classics; the classics of general

literature are reprinted, presumably without loss to the publishers, and he asks, Why not the medical classics for the medical profession?

It may be remembered that over five years ago the Editor made the following announcement:

"Few copies of the early contributions to medical literature written by Americans and published in this country are in existence. From an historical standpoint these early American contributions to medical science are worthy of better fate than that which has attended them until finally and safely lodged in a corporate library. For the better and more permanent preservation of these valuable monographs, the *Medical Library and Historical Journal* has undertaken the reproduction of a series of these in facsimile.

"The first to be published will be 'The Abuses and Scandals of Some Late Pamphlets in Favour of Inoculation of the Small Pox, Modestly obviated, and Inoculation further consider'd in a Letter to A— S—, M.D. & F.R.S., In London,' a monograph by William Douglass printed by Franklin at Boston in 1722. Photographic plates of the book will be made in exact facsimile and an illustrated prefatory sketch (historical, biographical and bibliographical) will be written by Lewis Stephen Pilcher, A.M., M.D., LL.D., the widely known medical bibliophile and editor of the *Annals of Surgery*. The issue will be strictly an edition de luxe, limited to 150 signed and numbered copies, printed in the best style of the typographical art, on large paper and bound in gray boards.

"Numbers will be assigned in the order in which subscriptions are received. The price of each book will be \$1.00 *net*, payable on delivery. After the limited edition has been printed the plates will be destroyed and the book will not be re-issued."

In response to this notice four subscriptions were secured, and a further canvass of the field convinced the Editor that the contemplated series of facsimile reprints would result in a considerable financial deficit. It is true that this plan involved comparatively expensive facsimile reproductions of what may be termed American medical *incunabula* rather than *classics*, the historical and bibliographical value of these early American efforts toward a native medical literature having been uppermost in the Editor's mind. So far as this class of reprints is concerned the conclusion was reached that the time was not yet ripe for the venture to meet with success, and hence the plan was given up and the subscriptions were returned.

Our correspondent raises the question as to why the efforts made in the past to republish a certain class of medical books have, after a time, all been discontinued, instancing the cases of Wood's Medical Library, the publications of the

old and the New Sydenham Societies, etc. Presumably Wood's Medical Library and similar attempts on the part of trade publishers were given up because they did not result in sufficient profit to the publisher. That the selection of the books reprinted and the form in which they were published may have been etiological factors of primary importance is open to some question. We are rather inclined to believe that at the time there was not a great enough portion of the medical profession sufficiently interested to make the republications financially successful. The trade publisher as a rule soon drops a losing venture after he has tried it out thoroughly. Have conditions influencing the demand for such reprints among any great number of the members of the medical profession changed?

The history of the Sydenham Society and its successor, the New Sydenham Society, both directly under the management of the medical profession, is of no little interest. In commenting on the approaching demise of the old Sydenham Society the London *Lancet* (1857, ii, p. 485) said:

"There is about to be a meeting of the Sydenham Society, to reconsider the resolutions recently passed for winding up the affairs of the Society, and terminating its existence. Some persons view with regret the dissolution of a Society which might be turned to such good account, and are anxious to reconstitute it. Whatever steps may be taken as to reconstitution, we trust that some more judicious choice of books may be made by the new than the old body. In looking back upon the career of the Society, we cannot but be convinced that its failure to become a popular and successful one is wholly due to the character of the works published. Great excellence there may be in the editions of Paulus Ægineta or Aretæus, and Hecker's Epidemics of the Middle Ages may be a very nice book for a medical antiquary; but this is certain, that, with the exception of Rokitansky's Pathological Anatomy and Simon's Annual [*sic*] Chemistry, very few of the works distributed among the general body of members of the Society have met with a grateful acceptance. Outsiders were not likely to be attracted to a Society which supplies exhumed antiquities instead of the standard medical science of the present day. A body which is perpetually losing its members, and cannot beat up recruits, must eventually cease to exist; hence the moribund state of the Sydenham Society. If this unfortunate body would rise like a phoenix from its ashes, let the council thereof endeavour to stimulate the progress of science, instead of devoting themselves to polishing up the excavated remains of a defunct philosophy..."

Whatever the merits of the situation in 1857, and the *Lancet* probably found the majority of the medical profession to agree with it at that time, the fact cannot be gainsaid

that many of the "exhumed antiquities" published by the old Society are often consulted in the modern medical library, and by others than the "medical antiquaries."

The New Sydenham Society was formed in 1858, the chief object of the Society being the republication or translation of valuable British or foreign medical works, papers, and essays, difficult of access to the members of the British profession. In its fifty years of existence the New Society has published on an average of from four to five volumes a year, the annual subscription of each member having been one guinea (to which was added the cost of carriage on volumes sent to members residing outside of London, Edinburgh or Dublin). Last year "It was felt and expressed by several members of the Council that the Society had to a large extent completed its vocation. The activity of medical publishers of the present day is wholly different from that which prevailed when the Society was instituted half a century ago." It was proposed "That the Society shall not be continued beyond the end of the current year," though it had at the time some nine hundred active members. Were the undertakings of the old and the New Sydenham Societies too ambitious?

Popular editions of the classics of general literature, such as Bohn's Library, the Temple Classics, etc., mentioned by our correspondent, have met with a large measure of success. The field has been a large one, however, and the support of such enterprises has not been drawn from one profession or class alone. The suggestion has been made that the best American medical classics be issued in acceptable form and at a very moderate price, and the plan has been taken under consideration. We invite an expression of the views of our subscribers as to what ten American medical classics they would choose to inaugurate such a series of reprints.

CORRESPONDENCE.

THE REPRINTING OF AMERICAN MEDICAL CLASSICS.

The Editor THE ÆSCULAPIAN.

DEAR SIR: It must be with some surprise and pleasure, perhaps with some pride, that your readers see in the list of "Everyman's Library" such a work as Harvey's "Motion

of the Heart and Blood in Animals." In the published list it is classed under Science, but in the whole series it stands alone as a representative medical classic, unless we include some others that belong more to general literature than to medicine, such as Defoe's "Journal of the Plague Year." It would be almost impossible for the publishers to find any other book that represents the medical classic to a greater degree than Harvey's "Motion of the Heart and Blood." This book has all the qualifications: it is of the first rank both as to author and subject matter, the style is pure and correct, it serves as a standard or model, and we may add the words of Lowell, "It is neither ancient nor modern, always new and incapable of growing old." Further, it was an epoch-making book, like many medical classics, but that is not an essential quality.

Now the question arises, and this is the object of my writing to you. What books in medicine have we that deserve to be placed along with Harvey "On the Heart and Blood" as classics of the first rank? This is a convenient way to put the question, because it at once raises a very high standard, and only those books should be put on the list that come quite up to, or very near, that standard. Very probably, if you should ask ten men well acquainted with medical literature to mention one other book worthy of that honor, you would receive ten different answers from them. One is apt to think highly of the books he himself possesses and has read and prized. An Englishman would probably mention Sydenham; a Frenchman would perhaps mention Laënnec; an Italian, Morgagni; and a German would probably want to mention several. What American author would a native American mention? Have we any American medical classics that belong to the first rank? One friend has mentioned Holmes' "On the Contagiousness of Puerperal Fever," and suggests that, if republished, Semmelweiss' work could fittingly be reprinted with it. Another has suggested Jackson's "Letters," and Nathan Smith "On Fever." If the first edition of Holmes' "On the Contagiousness of Puerperal Fever" is worthy of being bound in vellum when found, as Dr. Osler says, then it is worth being reprinted in an accessible form so that all may possess it. If Nathan Smith's work "On Fever" should be put into the hands of any young physician wishing something new on typhoid, then it comes up to

that part of the definition quoted above from Lowell, which states that a classic "is neither ancient nor modern, always new and incapable of growing old."

A list of American medical classics might be found by consulting Mumford's "Narrative of Medicine in America," and Osler's "Some Aspects of American Medical Bibliography," published in his "Æquanimitas" volume. Dr. Osler mentions a list of twenty that should be in every library.

Now, Mr. Editor, one gets tired of reading about, and about, and about, in medical histories and addresses, and gets to the point where he would like to possess the original work and read for himself. I confess to you being quite envious of the student of general literature who, with his Bohn's Library, his Temple Classics, his Everyman's Library, and such, can get almost any and every author worth getting, while the student of medical literature must keep in touch with the nearest medical library for anything he may want in the way of medical classics, and even then may only borrow for a few hours or at most get a loan for a few days.

In reference to the form of republication, much might be learned from the results of some previous attempts to publish the best medical literature in library form. Why did the old Sydenham Society cease to exist? Why did the New Sydenham go out of existence? What were the faults of Wood's Medical Library? Were these enterprises too ambitious, did they aim too high, or did they not charge enough to ensure success, or was the fault with the medical profession in not appreciating the best when offered?

I would suggest to some enterprising medical publisher that he issue, on good paper and well edited, the best of our American medical classics. Let them be issued unbound and the price to be in proportion to the number of pages. As the works in question vary greatly in size it would be impracticable to have an uniform price; but if issued unbound the binding could then be in vellum or cloth to suit the purse or the whim of the purchaser.

PETER SCOTT, M.D.

Brooklyn, New York.

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THE WRITINGS OF BENJAMIN FRANKLIN PERTAINING TO MEDICINE AND THE MEDICAL PROFESSION.*

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THE 200th anniversary of Benjamin Franklin's birth was celebrated last year with appropriate ceremonies in Boston and Philadelphia; and, in consequence, the life and works of this great man have become the subject of renewed interest and study.

Sainte-Beuve pronounced Franklin the most French of all Americans. Thomas Carlyle, beholding a portrait of Franklin, at an exhibition, remarked to a group of spectators, "There is the Father of all the Yankees."

The life and works of Franklin bearing upon Medicine and the Medical Profession are, it appears to me, well worthy of study and contemplation by the physician. Toutourat, in a small thesis published in Paris, in 1900, has previously undertaken this task which I am now attempting. I know of no other essay on Franklin but that of Toutourat, which has for its object the study of Franklin from the standpoint of the medical man. Several new works have been published since the date of Toutourat's essay, containing valuable letters and information concerning Franklin. The time, therefore, appears to me appropriate for another attempt to study Franklin from the medical man's point of view.

We of the medical profession may claim Franklin as one of us, for he was a member of the Royal Medical Society of Paris and an honorary member of the Medical Society of London, besides holding membership in several medical societies in this country. He was largely instrumental in

* An essay read, in part, before the Pittsburg Academy of Medicine, at a meeting held October 29, 1907.

founding the first hospital in America, wrote the inscription for its corner-stone, served as clerk and later as president of its Board of Managers. He founded the College of Philadelphia which gave birth to the first school of medicine in America. He was a medical book publisher of note. He investigated and wrote upon many problems in medicine. To the medical profession he gave the Franklinic electricity. He invented the bi-focal spectacles. He is the father of the modern scheme of ventilation. His ideas upon the contagiousness of colds which he stated one hundred and fifty years ago have within the last few years been shown by medical research to have been correct.

Franklin knew a large number of physicians in America and Europe, with many of whom he corresponded upon or discussed medical matters. Indeed, it is through this correspondence that we learn most of Franklin's study of and interest in medical matters. Leaders in our profession sought his opinion as that of a colleague and even came to him like pupils to a master. Franklin's title of "Doctor" was conferred upon him by the University of St. Andrews in 1759. The title was that of Doctor of Laws. He never received a medical degree as some have supposed he did. In 1762 the degree of D.C.L. was conferred upon him by the University of Oxford.

In short, Franklin's contributions to medical science taken together are of the highest scientific and practical value. It may indeed be doubted if they were equaled by those of any single contemporary medical man in America.

It seems best, for the sake of completeness, to begin this study of Franklin with some brief account of his life, even though to do so is to go over familiar ground.

A BRIEF SKETCH OF FRANKLIN'S LIFE.

Franklin was born January 6, 1706, in Boston, and was baptized the same day; he died in Philadelphia, April 17, 1790. He was the youngest son of a family of seventeen, and he relates that he can recollect when thirteen children sat down together at his father's table. He spent only two years at school. He early manifested a love for books, and tells us, "I do not remember when I could not read."

He was unable to get on with his brother James, for whom he worked as a printer and who was quick-tempered and domineer-

ing, so he ran away from home at the age of seventeen. After a short stay in New York and New Jersey, he arrived in Philadelphia.

Franklin entered Philadelphia, a runaway-apprentice boy, in 1721. Of this he tells us in his own words:

"I was in my working dress, my best clothes having gone around by sea. I was dirty from my journey, my pockets were stuffed with shirts and stockings, and I knew no soul, nor where to look for lodging. I was fatigued with travelling, and rowing, and want of rest, I was hungry; my whole stock of cash being a Dutch dollar and about a shilling in copper." He then tells us that he purchased three rolls of bread, one of which he placed under each arm, and the third he began to eat, and "Thus I went up Market Street as far as Fourth, past the door of Mr. Read, my future wife's father; she, standing at the door, saw me and thought I made, as I certainly did, a most ridiculous appearance."

At his funeral, fifty-nine years later, the Governor, the Chief Justice of the State, and the Mayor of Philadelphia served as pall-bearers; and among those in attendance were the chief officers of the federal, state and municipal governments, the members of the Legislature, the judges of the courts, the printers of Philadelphia, the members of the Philosophical Society, and the College of Physicians. Twenty thousand persons attended the funeral of the runaway printer boy. His body was buried in Christ Churchyard; and his grave with the simple inscription over it may be seen there to this day.

Surely there can be no greater contrast between the beginning and the end of any man's life than is to be seen in that of Franklin's, when we look at his entry into Philadelphia, and then at his homecoming from France, when he was easily the first citizen of Philadelphia, and had become known throughout the civilized world as a man eminent in philosophy, science, statecraft, and renowned for his literary productions, his humor, and plain common sense.

Soon after arriving in Philadelphia, Franklin entered the printing office of a man named Keimer as an apprentice.

Keith, the Governor of Pennsylvania, who seems to have been a most boastful individual with a lively imagination and a defective sense of honor, sent Franklin on a fool's errand to London, where he arrived, December 24, 1724, as penniless as when he entered Philadelphia. Here he secured employment and worked

at his trade as a printer. He returned to Philadelphia, October 11, 1726. In 1756, he again set out for England, where he acted as agent for three of the colonies; and he resided abroad until 1785, with the exception of two rather brief visits to America made during this period. The last nine years of this period, in many respects the most brilliant of his career, were spent in France. Then, in 1785, we find him returning to America, perhaps the most conspicuous figure in two continents, with the unbounded friendship and praise of the French people on one hand, and the gratitude and admiration of his countrymen on the other.

The years from 1726 to 1757, which Franklin spent in Philadelphia, were most eventful ones. It was on the achievements and habits of life he then developed that his subsequent world-wide fame rested. He was only twenty-one years old when he organized the Junto Club, which was at first called the "Leather Apron." He attained rapid success as a printer and a business man. By the time he was twenty-six years old he had become the editor of the *Pennsylvania Gazette*, by far the most important newspaper in the colonies; he had founded the Philadelphia Public Library, the first of its kind in America, and had begun the publication of *Poor Richard's Almanac*, which was destined to be known throughout the civilized world by many translations. He entered into political life at an early age and thus secured the "profitable job" of printing the Pennsylvania paper money.

Franklin's great industry, thrift, and business sagacity made him very prosperous. Indeed, in 1748, when he was only forty-two years old, he planned to retire from business and devote his life to scientific experiments and to philosophical studies. This was a year of peace. The treaty of Aix-la-Chapelle had been signed and it was thought that the prospects for continued peace were now good. Only two years before Franklin had begun his famous series of experiments in electricity, on which his fame as a scientist chiefly rests, and he now hoped to continue them in peace and quiet. His fortune was now ample for his needs. But he was destined to play many important parts before he left his native shores in 1756.

Franklin served in the Legislature several terms. In 1753 he was made Postmaster General for the colonies. Under him the office for the first time showed a balance on the right side. After Braddock's defeat, the Governor offered Franklin a gen-

eral's commission if he would attempt the capture of Fort Duquesne. It will be remembered that Braddock's expedition was fitted out by Franklin, to do which he pledged a large portion of his private fortune. Had Braddock listened to a few sage hints given him by Franklin, his crushing defeat might have been avoided. Franklin was really interested in or started nearly every good measure or institution which originated in Philadelphia during the years he lived there. This is not the place to recount his public services, his practical inventions, his scientific observations, or his literary achievements, so I must content myself with the mere mention of a few of them.

He organized a State Watch in Philadelphia; founded the Academy which was the beginning of the University of Pennsylvania and from which originated the first medical school in America; established the American Philosophical Society, which flourishes to this day. He served as Justice of the Peace and as a member of the Municipal Council. He was commissioned to treat with the Indians. He served as Postmaster General. He organized the first fire company and founded our first library in Philadelphia.

He had, with Dr. Bond, the honor of founding the first hospital in America, the Pennsylvania Hospital of Philadelphia. He was Colonel of a regiment; a member of Congress, a member of the Constitutional Convention, a Governor of a Colony, Colonial agent at London, and Ambassador to France.

Franklin investigated the phenomena of the whirlwinds, the Gulf Stream, and the thermometer. He made numerous experiments in producing cold by evaporation and was the first to do so. Sir William Herschel, the foremost physicist of his age, wrote Franklin asking his opinions on astronomy. By Franklin's influence John Bartram, of Philadelphia, was made American Botanist to George III. He interested himself to send rare seeds from America to Europe and from Europe to America. His observations on light are of the highest order.

Franklin began his philosophical and scientific studies at an early age and continued them with more or less interruption all through his life. His great European fame rests mainly upon his achievements in the field of science. Apparently no subject escaped his notice or failed to interest him. He wrote upon electricity, seismology, geology, meteorology, physics, chemistry, astronomy, mathematics, hydrography, horology, aeronautics,

navigation, agriculture, ethnology, paleontology, medicine, hygiene, and pedagogy.

During his long residence in England and France Franklin met a large number of persons prominent in the world of politics and science. When he sailed for England in 1756, he had gained high distinction as a man of letters, a diplomat, a philosopher, and a scientist; and this reputation steadily grew during his residence abroad. When he returned to Philadelphia, at the age of seventy-nine, after nine years' residence in France, to spend at home the four years that were yet to remain of his life, he was one of the most commanding figures of the civilized world; and his name was a household word in America, England and France. Franklin's autobiography ends with his arrival in London in 1756.

He made two visits to Scotland where he met many men of prominence—Hume, Robertson, Lord Kames, Alexander Dick, Dr. Cullen and Dr. Alexander Monro. He also met Adam Smith, with whom he discussed subjects in political economy. It is said that Smith afterward submitted much of the manuscript of "The Wealth of Nations" to Franklin for his suggestions. Upon his return to Scotland, a few months later, he renewed his acquaintance with these gentlemen, and for years afterwards he corresponded with several of them.

In a letter which he wrote to his son William, dated London, January 30, 1772, Franklin speaks of his second visit to Scotland, where he met his old friends and made new ones.

Summing up Franklin's manifold activities Parton says of him:

"We see him expatiating in his letters upon such diverse topics as chimneys and swimming; metallic roofs and spots on the sun; the average fall of rain and fireproof stairs; the torpedo, the arnomica, and the Northwest Passage; the magnet and the improved wheels; glass-blowing, Prince Rupert's drops, and the aurora borealis; the inflammatory gases, and the effects of vegetation upon the air and water. Nothing escaped him that transpired in philosophic circles, and his remarks on subjects agitated therein were always valuable, and frequently original. It is, however, the *method* of a philosopher that chiefly benefits those who come after him; the method being, as it were, the pathway, which when discovered and described, any intelligent mind can pursue, and reach interesting results. Franklin's method is particularly noticeable, because it was not that of a professor, whose

occupation it is to investigate, but that of a man naturally interested in the phenomena surrounding him, who studied them with a purely human curiosity."

Writing of his sojourn in London as a young apprentice, Franklin states that he was promised an introduction to Sir Isaac Newton and regrets that he never met him.

Upon his second trip to England Franklin met Dr. Shipley and stayed for long periods at his home, where he wrote his autobiography. Franklin always refers to Dr. Shipley as "The good Bishop of St. Asaphs." The two grew to be very warm friends. Dr. Shipley was a staunch friend of the colonies in the House of Lords when his brother Bishops were opposed to our cause.

Pitt was inaccessible to Franklin; and he never met that commanding figure in London, Dr. Samuel Johnson. Johnson, as is well known, had a strong prejudice against Americans, believing the revolutionary cause unjust, and it is said declined to meet Franklin.

Priestley, Cavendish, and Lavoisier corresponded with Franklin on the subject of physics and chemistry. Sir Humphrey Davy, who had a fine appreciation of literary merit as well as of scientific attainment, writes:

"The style and manner of his publication on electricity are almost as worthy of admiration as the doctrine it contains. He has endeavored to remove all mystery and obscurity from the subject. He has written equally for the philosopher and for the uninitiated; and he has rendered his details amusing as well as perspicuous, elegant as well as simple. Science appears in his language in a dress wonderfully decorous, the best adapted to display her native loveliness."

Franklin was in touch with many of the most distinguished men of England. He enjoyed the company of Mrs. Montague and Garrick and Lord Shelbourne. He knew Benjamin West, Horatio Gates, Charles Lee, John Hawkesworth, Burke, Hume, Kames, Sir John Pringle, Dr. Fothergill and Dr. Canton. He dined frequently with certain of these gentlemen.

In France, Franklin's acquaintance and prestige was even greater than it was in England. Among those with whom he came in contact in this country may be mentioned La Duchesse d'Enville, Duc de la Rochefoucauld, M. Turgot, Duc de Chaulnes, Comte de Crillon, Vicomte de Sarfield, M. Brisson, of the Royal

Academy of Sciences, Comte de Milly, Prince des Deuxponts, Comte d'Estaing, Marquis de Mirabeau, M. Beaugeard, Treasurer of the State of Brittany.

"John Adams declared that Franklin's reputation was more universal than that of Leibnitz or Newton, Frederick or Voltaire; and his character more beloved and esteemed than any or all of them. Surely there never lived a man more idolized. Everything about him was imitated and extolled—his spectacles, his marten fur cap, his brown coat, his bamboo cane. Men carried their canes and their snuffboxes *à la Franklin*, women crowned him with flowers, and every patrician house in Paris showed a Franklin portrait on the wall, and a Franklin stove in one of the apartments. Busts were made of him in Sevres china, set in a blue stone with a gold border, and barrels of miniatures made of the clay from Chaumont found eager purchasers. When Voltaire and Franklin kissed each other in the hall of the Academy, the enthusiastic sages and tribunes thundered their applause—'Behold Solon and Sophocles embrace!'" (Smyth.)

Franklin's conversation, it appears upon the competent testimony of Talleyrand, was as simple and direct as his writing, which, indeed, gives the greatest charm to his literary style. Speaking of his philosophical writings Jeffery remarked that, "The most ingenious and profound explanations are suggested as if they were the most natural and obvious way of accounting for the phenomena." Balzac expressed utmost delight in the writings of Franklin.

Franklin's scientific correspondence was carried on in nine languages. He was a member of one or more scientific societies in almost every country of Europe.

Thomas Jefferson had been appointed, March 10, 1785, Franklin's successor as minister plenipotentiary. He had already been seven months in France under commission to assist Franklin and Adams in negotiating commercial treaties with European powers. He had noticed the universal admiration and reverence with which Franklin was regarded. He said:

"There appeared to me more respect and veneration attached to the character of Franklin in France than to that of any other person in the same country, foreign or native. I had frequent opportunities of knowing particularly how far these sentiments were felt by the foreign ambassadors and ministers at the court of Versailles. * * * The succession to Dr. Franklin at the

court of France was an excellent school of humility. On being presented to any one as the minister of America, the commonplace question in such cases was, 'Il est, Monsieur, qui remplacez le Docteur Franklin?' 'It is you, Sir, who replaces Dr. Franklin?' I generally answered, 'No one can replace him, Sir; I am only his successor.' "

Jefferson also wrote to Congress: "Europe fixes an attentive eye on your reception of Dr. Franklin. He is infinitely esteemed. Do not neglect any mark of your approbation which you think proper. It will honor you here."

Summing up Franklin's character as a scientist and a philosopher Parton says:

"Franklin was the man of all others then alive who possessed in the greatest perfection the four requisites for the successful observation of nature or the pursuit of literature—a sound and great understanding, patience, dexterity, and an independent income.

"The great merit of Franklin in his investigation of nature was the soundness of his method, which was this: He collected his facts diligently; then he subjected his theory to every test that he could contrive; and, finally, he recorded the whole process with clearness and modesty." (Parton.)

In closing this short and very imperfect sketch of Franklin's life, I wish to quote a charming picture given us of him when he was in the evening of his life, quietly living in Philadelphia after his return from France. It illustrates "the ruling passion strong in death."

A scholarly Massachusetts clergyman, Manasseh Cutler, visited Franklin at his home in Philadelphia after his return from France. Under date of July 13, 1787, he makes a very interesting note in his diary, from which I quote:

"He showed us a glass machine for exhibiting the circulation of the blood in the arteries and veins of the human body. The circulation is exhibited by the passing of a red fluid from a reservoir into numerous capillary tubes of glass, ramified in every direction, and then returning in similar tubes to the reservoir, which was done with great velocity, without any power to act visibly upon the fluid, and had the appearance of perpetual motion.

"He seemed extremely fond, through the course of the visit, of dwelling on philosophical subjects, and particularly that of

Natural History; while the other gentlemen were swallowed up with politics. This was a favorable circumstance for me, for almost the whole of his conversation was addressed to me, and I was highly delighted with the extensive knowledge he appeared to have of every subject, the brightness of his memory, and clearness and vivacity of all his mental faculties, notwithstanding his age. His manners are perfectly easy, and everything about him seems to diffuse an unrestrained freedom and happiness. He has an incessant vein of humor, accompanied with an uncommon vivacity, which seemed as natural and involuntary as his breathing."

FRANKLIN'S RELATIONSHIP TO MEDICINE AND THE MEDICAL PROFESSION.

All his life Franklin took a deep interest in medical matters. He made many experiments and observations bearing directly or indirectly upon the science and art of medicine. Upon one occasion, in writing to his "Honored father and mother," he told them:

"I apprehend I am too busy in prescribing and meddling in the doctor's sphere, when any of you complain of ails in your letters. But as I always employ a physician myself when any disorder arises in my family, and submit implicitly to his orders in everything, so I hope you consider my advice, when I give any, only as a mark of my goodwill, and put no more of it in practice than happens to agree with what your doctor directs."

Writing to John Adams in 1781, he remarked:

"I hope your health is fully established. I doubt not but you have the advice of skillful physicians, otherwise I should presume to offer mine, which would be, though you find yourself well, to take a few doses of bark, by way of fortifying your constitution and preventing a return of your fever."

The Earl of Buchan upon one occasion credited Franklin with saving his life when he lay prostrated with fever. His physician, Dr. Simpson, ordered that the patient be blistered. Franklin dissented from this view, and soon afterward the patient made a speedy recovery.

To Rev. Samuel Johnson Franklin wrote the following letter, giving some sound medical advice:

"DEAR SIR: I am sorry to hear of your illness. If you have not been used to the fever-and-ague let me give you one caution.

Don't imagine yourself thoroughly cured, and so omit the use of the bark too soon. Remember to take the preventing doses faithfully. If you were to continue taking a dose or two every day for two or three weeks after the fits have left you, 'twould not be amiss. If you take the powder mixed quickly in a tea-cup of milk, 'tis no way disagreeable, but looks and even tastes like chocolate. 'Tis an old saying: That one ounce of prevention is worth a pound of cure—and certainly a true one, with regard to the bark, a little of which will do more in preventing the fits than a great deal in removing them.

"But if your health would permit I should not expect the pleasure of seeing you soon. The smallpox spreads apace, and now in all quarters; yet as we have only children to have it, and the doctors inoculate apace, I believe they will soon drive it through the town, so that you may probably visit us with safety in the spring."

Franklin's old friend, Dr. Peter Collinson, died from suppression of urine in 1768. Writing to Dr. Fothergill Franklin makes mention of the fact and refers to a similar illness from which Fothergill had recovered, and he adds: "As I am sometimes apprehensive of the same disorder, I wish to know the means that were used and succeeded in your case, and shall be exceedingly obliged to you for communicating them when you can do it conveniently."

In "Poor Richard," Franklin has a number of jokes at the doctor's expense. Among them are these:

"Beware of the young doctor and the old barber."

"He's the best physician that knows the worthlessness of the most medicines."

"Many medicines, few cures."

"There's more old drunkards than old doctors."

"God heals, and the doctor takes the fees."

"Don't misinform your doctor nor your lawyer."

"Don't go to the doctor with every distemper, nor to the lawyer with every quarrel, nor to the pot for every thirst."

"Poor Richard" also offers some excellent hygienic and dietetic suggestions. For example:

"We are not so sensible of the greatest health as of the least sickness."

"A full belly makes a dull brain; the muses starve in a cook's shop."

"Eat few suppers and you'll need few medicines."

"A full belly is the mother of all evils."

"I saw few die of hunger; of eating, 100,000."

"He that steals the old man's supper does him no wrong."

"Three meals a day is bad living."

"If thou wouldst live long, live well; for folly and wickedness shorten life."

From "Poor Richard's" observations, which are of general application, I quote four which every physician would do well to lay to heart:

"Want of care does us more damage than want of knowledge."

"The most exquisite folly is made of wisdom spun too fine,"

"What signifies knowing the names, if you know not the natures of things."

"No man e'er was glorious who was not laborious."

Although Franklin had his jokes at the expense of physic and the physician, he had a great respect for both. For all through his life he took a deep interest in medicine and numbered physicians among his closest and most intimate friends. He talked to and wrote to many physicians in America, England, and France, not only upon medical subjects, but also upon other matters of scientific interest and upon philosophy and politics.

Among his American friends were Drs. Thomas and Phineas Bond, John Redman, Benjamin Rush, William Shippen, John Morgan, Thomas Cadwalader and John Jones, of Philadelphia, Drs. Cadwallader Colden and John Bard, of New York, and Dr. Benjamin Waterhouse, of Boston.

In England Franklin met many medical men. He was on intimate terms with Sir John Pringle and Dr. Fothergill and knew Sir William Watson, William Heberden, Edward Bancroft and William Hewson. A distinguished English physician, John Coakley Lettsom, wrote a life of Franklin. In Scotland Franklin met Dr. Cullen, Dr. Alexander Monro and other physicians of the Edinburgh school.

Among the French physicians with whom Franklin came in contact or corresponded were Dubourg, Guillotin, and Vicq d'Azyr. He was a regular correspondent with Dr. Jan Ingenhousz, of Vienna, the court physician to Maria Theresa and Joseph II.

These medical men at home and abroad, the leaders in their

profession, sought Franklin's opinions as an equal colleague, and even came to him in the attitude of pupils to a master.

In Philadelphia Franklin did an immense deal for medicine and the medical profession. With Dr. Bond he founded the first hospital in America. From the College of Philadelphia, which he founded, grew the first medical school in America. He published several medical works, and by his criticism and advice rendered material assistance to the authors. Rush, Bard, Cadwalader, and Thomas Bond dedicated medical works to him. On one occasion Franklin had to remonstrate with Rush, who desired to make use of a most "extravagant encomium" in dedicating one of his books to him. Rush, after modifying the dedication, published the book under the patronage of Franklin's great name.

Dr. Thomas Cadwalader, the first teacher of anatomy in North America, aided Franklin in establishing the Philadelphia Library and the Pennsylvania Hospital.

Franklin's friendship for medical men of Philadelphia and students beginning the study of medicine is shown in the following letter written by him to William Cullen, M.D., from London, October 21, 1761. It may be supposed that Shippen and Morgan were fortunate indeed to be introduced to the great Edinburgh master by Franklin.

"I thank you for the civilities you were so good as to shew my friend, Mr. Shippen, whom I took the liberty of recommending to your notice the last year. Give me leave to recommend one more to your advice and countenance. The bearer, Mr. Morgan, who purposes to reside sometime in Edinburgh for the completion of his studies in Physic, is a young man of Philadelphia, whom I have long known and greatly esteem; and as I interest myself in what relates to him, I cannot but wish him the advantages of your conversation and instructions. I wish it also for the sake of my country, where he is to reside, and where I am persuaded he will be not a little useful. I am, with the greatest esteem and respect, dear sir, your most obedient and most humble servant,

B. FRANKLIN."

Most of the American physicians who were friends and co-workers with Franklin are well known and need no introduction. But brief notes on a few who are not so well known may be of interest in this place.

Dr. Benjamin Waterhouse, who was professor of Theory and Practice of Medicine in Harvard University, had taken his degree at Leyden and was the first physician in this country to practice vaccination. In July, 1800, he vaccinated his own children from vaccine virus which he procured from Europe. Dr. Waterhouse was a nephew of Dr. Fothergill with whom Franklin was on such terms of intimate friendship.

In his "History of Medicine in the United States," Packard gives us a good deal of information concerning Dr. John Jones, who attended Franklin in his last illness. His father and grandfather before him were physicians, the former having come to Philadelphia with Penn. Dr. Jones published a treatise on surgery, which passed through three editions, the third in 1795. Dr. Packard tells us that, "Dr. Jones had studied medicine under Dr. Thomas Cadwalader, of Philadelphia, and his book is dedicated to him in terms of warm admiration. After completing his studies with Dr. Cadwalader, Dr. Jones went abroad and pursued his medical studies in London, Edinburgh, Leyden and France. He received the degree of M.D. from the University of Rheims. He performed the first lithotomy ever done in the city of New York, and was professor of surgery in the Medical School of New York. In 1780 he removed to Philadelphia and succeeded to Dr. John Redman's place as one of the physicians to the Pennsylvania Hospital. He was one of the founders of the College of Physicians of Philadelphia and its first vice-president. He was a friend of Benjamin Franklin, and attended that great man in his last illness, afterwards publishing a very interesting account of the philosopher's last hours. Dr. Jones died in June, 1791, in the sixty-third year of his age."

Dr. Cadwallader Colden was a Scotchman, educated in Aberdeen and Edinburgh. He came to Philadelphia in 1708. In 1718 he settled in New York. He was the author of several medical essays and a botanist of note. He occupied many positions of public trust and became quite wealthy. He died in 1776.

We get a very good glimpse of Franklin through the eyes of Rush, who refers to him a number of times in his diary, from which the following passages are quoted:

"1786, August. I waited on the doctor with a Dr. Minto. He said he believed that tobacco would in a few years go out of use. That about thirty years ago, when he went to England, smoking was universal in taverns, coffee-houses, and private families, but

that it was now generally laid aside, that the use of snuff, from being universal in France, was become unfashionable among genteel people, no person of fashion under thirty years of age now snuffed in France. He added that Sir John Pringle and he had observed that tremors of the hands were more frequent in France than elsewhere, and probably from the excessive use of snuff. They once saw in a company of sixteen but two persons who had not these tremors at a table in France. He said Sir John Pringle was cured of a tremor by leaving off snuff. He concluded that there was no great advantage in using tobacco in any way, for that he had kept company with persons who used it all their life, and no one had ever advised him to use it. The doctor in the 81st year of his age declared he had never snuffed, chewed, or smoked.

"Sept. 22d. Waited upon Dr. Franklin with Dr. Thibou, of Antigua. The doctor said few but quacks ever made money by physic, and that no bill drawn upon the credulity of the people of London by quacks, was ever protested. He ascribed the success of quacks partly to patients extolling the efficacy of the remedies they took from them rather than confess their ignorance and credulity, hence it was justly said, 'quacks were the greatest liars in the world, except their patients.'

"November. Spent half an hour with Doctor in company with the Rev'd. Mr. Bisset and Mr. Goldborough. He said Sir John Pringle once told him 92 fevers out of 100 cured themselves, 4 were cured by art, and 4 proved fatal. About the end of this month I saw him alone. He talked of climates; I borrowed some hints from the conversation for the essay on climates."

That Franklin was a man of the world and well acquainted with the temper of scientific societies as regards their constitution and membership, is well seen from a letter which he wrote to Rush from London, July 22, 1774. He says:

"DEAR SIR:

"I received your Favour of May 14, with the very ingenious Oration you delivered at the Society, for which I thank you. The Bookseller you had likewise sent it to, M. Dilly, being desirous of Dr. Huck's Opinion & Mine as to its Publication, we had a little Consultation upon it; the Result of which was, that tho' the Piece had in many Respects a great deal of Merit, yet as there were

some Particulars that would be excepted to by the medical People here, many of whom are in the Royal Society & have great Weight there; and as the Society generally is of late grown more difficult in the Admission of new Members, several Candidates being this last year rejected, and a Criticism to the Disadvantage of your Piece in the Reviews or otherwise might prejudice some Votes against you; we thought it best the Publication should be postponed till after the Ballot for your Election; it being intended by us to put you up as a Candidate at the next meeting of the Society, which will be in November, and we are unwilling to hazard your being refused, as it would be better not to propose you, than to do it without a moral Certainty of Success. We therefore advised the Bookseller not to print it till Winter, which he the more readily agreed to, as that is the best Season for publishing."

In a letter to Rush three days later he writes:

"I took the Liberty last Year of recommending to the Society for Election as a Member, our Friend (and Zealous Friend of America) M. Barbeau Dubourg of Paris. I have never heard whether it was done or not. You know his Merit in Science to be such as would do honour to any Society in Europe. Is it possible there could arise any Objection to his Admission?"

On the occasion of Braddock's defeat, Franklin, by his prudence and common sense, saved his two friends, the Drs. Bond, considerable embarrassment, of which he tells us in his autobiography:

"Before we had the news of this defeat (Braddock's), the two Doctors Bond came to me with a subscription paper for raising money to defray expenses of a grand firework, which it was intended to exhibit at a rejoicing on receipt of the news of our taking Fort Duquesne. I looked grave and said it would, I thought, be time enough to prepare for the rejoicing when we knew we should have occasion to rejoice. They seemed surprised that I did not immediately comply with their proposal. 'Why the D——!' says one of them, 'you surely don't suppose that the fort will not be taken?' 'I don't know that it will not be taken, but I know that the events of war are subject to great uncertainty.' I gave them the reasons of my doubting, the subscription was dropt, and the projectors thereby missed the mortification they would have undergone if the firework had been pre-

pared." Dr. Bond afterward said that he did not like Franklin's forebodings.

It will be remembered that Franklin gave Dr. John Morgan a letter of introduction to Cullen, of Edinburgh. Not many years later, he advised with Bond as to the relative claims of London and Edinburgh as centers of medical teaching, since Dr. Bond was then proposing to send his son abroad that he might have some of the same advantages that he had had before him. Under date of London, February 5, 1772, Franklin writes:

"I suppose your son Richard will spend some time in London, where by what I have heard, Physic and Surgery may be studied to as great Advantage as in any Part of the World, by Attending the Anatomical Lectures and Hospitals, conversing with the most eminent Practitioners, and Reading under their Advice and Direction: And yet the general Run is at present to Edinburgh, there being at the Opening of the Schools when I was there in November last, a much greater Number of medical Students than had ever been known before. They have indeed a Set of Able Professors in the several Branches, if common Opinion may be rely'd on. I who am no Judge in that Science, can only say that I found them very sensible Men, and agreeable Companions. I will endeavour to obtain Sir John Pringle's Advice in the Affair, as you desire. Every Wednesday Evening he admits young Physicians and Surgeons to a Conversation at his House, which is thought very improving to them. I will endeavour to introduce your Son there when he comes to London. And to tell you frankly my Opinion, I suspect there is more valuable knowledge in Physic to be learnt from the honest candid Observation of an old Practitioner, who is past all desire of more Business, having made his Fortune, who has none of the Professional Interest in keeping up a Parade of Science to draw Pupils, and who by Experience has discovered the Inefficacy of most Remedies and modes of Practice, than from all the formal Lectures of all the Universities upon Earth. I like therefore a Physician's breeding his son to Medicine, and wish the Art to be continued, with the Race, as thinking that must be upon the whole most for the Publick Welfare."

In England Franklin was on most intimate terms with Priestley and Dr. Fothergill, and Sir John Pringle, the president of the London Medical Society. In 1787 he was made an honorary

member of this Society, the meetings of which he had often attended when he resided in London.

Jefferson relates an incident of Franklin which is well worth quoting. "When I was in London, in such a year, there was a weekly club of physicians, of which Sir John Pringle was President, and I was invited to attend, by my friend, Dr. Fothergill. Their rule was to propose a thesis one week and discuss it the next. I happened there when the question to be considered was whether physicians have, on the whole, done most good or harm? The young members, particularly, having discussed it very learnedly and eloquently till the subject was exhausted, one of them observed to Sir John Pringle, that although it was not usual for the President to take part in a debate, yet they were desirous to know his opinion on the question. He said they must first tell him whether under the appellation of physicians they meant to include *old women*; if they did he thought they had done more good than harm, otherwise more harm than good."

Franklin's friend, Sir John Pringle, was a man of excellent parts. He had studied with the illustrious Boerhaave. He did much to prevent dysentery and hospital fevers, thus improving the condition of the English army. With Sir John, Franklin once drove in a post-chaise through Scotland, Switzerland, Holland, and Germany. Franklin held Sir John in the highest esteem and affection. Upon the news of his death he wrote to Dr. Ingenhousz, October 2, 1781, lamenting their loss. "We have lost our common Friend, the excellent Pringle. How many pleasing hours you and I have pass'd together in his Company!"

With Dr. Fothergill Franklin discussed questions of politics as well as those of medicine; and he held a high place in his esteem and affection. Upon the death of Fothergill he wrote a letter of condolence to Dr. Benjamin Waterhouse, a nephew of Fothergill, who had studied at Leyden and came to America and set up a practice, and who was Professor of Medicine at Harvard (1783-1812).

"I think a worthier Man never lived. For besides his constant Readiness to serve his Friends, he was always studying and projecting something for the Good of his Country and of Mankind in general, and putting others, who had it in their Power, on executing what was out of his own reach; but whatever was within it he took care to do himself; and his incredible Industry and unwearied Activity enabled him to do much more than can

now be ever known, his Modesty being equal to his other Virtues."

Another of Franklin's English medical friends was Dr. William Hewson, a brilliant English surgeon who was cut down in his usefulness by an attack of blood poisoning. Hewson married Miss Mary Stevenson, to whom Franklin wrote so many delightful and sprightly letters.

During his stay in London, Franklin was a frequent visitor of the Royal Society Club, if he was not a member. He was a member of a London Coffee-House, at Ludgate Hill. Here he met Dr. Richard Price, Dr. Priestley, Dr. Fothergill, Peter Collinson, Dr. Hawksworth, and Stanley, the composer, who were all members or frequenters of this club, the weekly meetings of which Franklin keenly enjoyed, and remembered with fondness to the close of his life.

The physicians of France honored and esteemed Franklin no less than did their colleagues in America and England.

Vicq d'Azyr, physician to the queen of France, founded the Royal Society of Medicine in 1776 and became its perpetual secretary. Franklin was elected a foreign associate, being the first to receive this honor. Vicq d'Azyr wrote to him: "The Royal Society recognizing the talents and brilliancy of the physicians of America, we wish to confer the honor of correspondent upon some of them, and we judge that that honor would be doubled by passing through Franklin's hands, and therefore hope that he will present the diplomas."

Dr. Barbeau Dubourg, one of the most distinguished physicians in Paris, a member of many societies, translated Franklin's works into French, in 1772. During a long and affectionate friendship he always addressed Franklin as "Mon cher maitre."

Dubourg was a member of the Royal Society of Medicine, the Royal Society of Montpellier, the Medical Society of London, and the Academy of Sciences of Stockholm. He was born at Mayence, February 12, 1709. Like his brothers he studied theology, and abandoned it for the practice of medicine.

Another of Franklin's Parisian doctor friends was Dr. Guillotin (1788-1814), who was Professor of Anatomy, Physiology, and Pathology in Paris. He assisted Franklin and Lavoisier in investigating mesmerism. He consulted Franklin about a project of emigration to America. Letters were frequent between them.

His name was destined to be forever linked to the French instrument of execution.

Gastellier, a French medical writer, asked Franklin to allow him to dedicate to him his treatise upon "Specifics in Medicine," a work which was recognized by the Royal Academy of Medicine. The Marquis of Mirabeau interceded for him with Franklin.

Franklin carried on an extended correspondence with Dr. Jan Ingenhousz, of Vienna, the court physician to Maria Theresa and Joseph II. Together they travelled in England and France. On one occasion, Franklin's advice was sought by Dr. Ingenhousz concerning the propriety of inoculating the young princess of the imperial family.

Jean Baptiste Le Roy was highly esteemed by Franklin. Both were members of the French Academy.

On the recommendation of Franklin, Dubourg and Ingenhousz were made members of the American Philosophical Society.

(To be continued.)

IRVING COLLINS ROSSE: A BIOGRAPHICAL SKETCH.*

BY THOMAS HALL SHASTID, A.M., M.D., LL.B.,
of Marion, Illinois.



R. IRVING COLLINS ROSSE—alienist, general author, and medico-jurisperdientist—was born at East New Market, Dorchester County, East Shore, Md., October 2, 1842, of Anglo-Scotch descent.

He attended St. John's College, Annapolis, for three years, then West Point Military Academy for one. Turning his attention to medicine, he resigned from the Academy, and studied for a time with Dr. Alexander H. Bayley, of Cambridge. His medical doctorate he received in 1866 from the University of Maryland.

For a time he studied in London, Berlin, and Paris. An honorary A.M. he received, in later life, from Georgetown University, and a rather large number of honorary degrees from various institutions in Europe.

* This sketch is to appear in Dr. Howard A. Kelly's forthcoming "Cyclopedia of American Medical Biography."

His life as a doctor began with his entry into the position of clinical assistant in the Baltimore Infirmary, where he served with marked distinction. In a very short time, however, he resigned to enter the medical service of the U. S. Army. As an army surgeon, he lived at various posts throughout the West and South. Once he was quarantine officer for Georgia. In this capacity he was present on Tybee Island during the outbreak of cholera there. A little later he was appointed quarantine officer at Brazos Santiago, Texas. He also saw much service on the staff of General Henry Hunt, in North Carolina, during the troubles with the Ku-Klux-Klan.

Dr. Rosse was at one time Professor of Nervous and Mental Diseases in the Georgetown University. He was also Vice-President of the Medico-Legal Society of New York, and a member of numerous social, literary, and scientific clubs and associations.

He married, when forty-seven years of age, Miss Florence James, of New York, a granddaughter of General Worth. One child, a son, was born to them.

He died of ptomaine poisoning at Washington, D. C., May 3, 1901.

Dr. Rosse was an extensive writer, and his literary work was valuable both for its content and its form. He assisted in the preparation of the "Medico-Surgical History of the Rebellion." Later, he had in charge the force which compiled the "Index-Catalogue of the Surgeon-General's Library." He did much personal work on the latter work. He wrote voluminously, too, as correspondent for the *New York Herald* and the *San Francisco Examiner*, and contributed numerous scientific articles to the press of this and of various foreign countries. He was one of the crew of the famous ship "Corwin," which sailed in 1881 to the relief of the "Jeannette." While on this cruise he ascended the supposedly inaccessible Herald Island, and was the first human being in history to set foot on Wrangle Island. For these and other exploits he was created a Fellow of the Royal Geographical Society of England. On his return he wrote two books which gave him name and fame immediately. These works are, "The Cruise of the Corwin" and "The First Landing on Wrangle Island." One of the most remarkable of Dr. Rosse's writings is an article on "Personal Identity," contributed to Volume I. of

Witthaus and Becker's "Medical Jurisprudence, Forensic Medicine, and Toxicology." This article displays the widest range of scholarship combined with profound and original research. As he was interested greatly in medico-legal matters, and was often subpoenaed as a witness in medico-legal cases (for instance, the Horton case and the Bean murder trial), he wrote very much on these topics.

The subject of our memoir was a man of the most strongly marked character. Whatever he liked, he liked, and whatever he disliked, he hated. He was always, however, frank, open, and honest. One day, when scarcely more than an infant, he disobeyed his mother by going barefoot in the street. A broken toe was the result, and, ever after, he was both obedient and straightforward.

As a small child, he was sickly and weak. Later, determining to rid himself of his undesirable physical condition, he organized a gymnasium in which his mates and he would spend long hours each day. In course of time, he became a renowned athlete. He had no hobby among his various exercises, but boxed, fenced, ran, swam, jumped and "put up" dumb-bells with equal assiduity and success. He used to "put up" 120 pounds with each hand simultaneously.

He was a natural cartoonist, and, in those boyhood days, the various characters about town afforded subjects for his skill. Sometimes he employed his ironical pencil on the sacred walls of the school-room. Over and over again he was summoned to the dais, when the teacher would say, "I know you did it—no one else here can."

When at West Point he had a famous fist-fight with a cadet named Cranston. The fight was not of Rosse's seeking, but had been "arranged." It lasted an even score of rounds, and came to a close even then for the sole and simple reason that both the fighters were absolutely exhausted. Two of Rosse's ribs were broken, and three of Cranston's.

When a student in Paris, he had another fight, this time without "arrangement." It occurred in front of the hotel of the American minister. Two young American ladies, passing from the hotel to their carriage, were grossly insulted by a couple of young French nobles. Dr. Rosse did not hesitate a moment, but knocked the rowdies down. One lay insensible for longer than

an hour. A policeman arrested Rosse, but the American minister, who had heard and seen the whole affair, came forward and agreed to be responsible for Rosse's appearance next day. In the morning the trial was begun, but the two young Frenchmen very soon withdrew their complaint and made acceptable apologies.

While talking of athletics, we may remark that Rosse once, when crossing the Atlantic, persuaded the captain of the steamer to stop the vessel and let him take a plunge in the ocean. On another occasion, when quarantined in a small boat for a number of days, with only a single companion, he used, to relieve the tedium, to stand upon his hands.

Rosse was generous and open-handed to a fault. He kept no accounts and he rendered no bills. Those paid him who wished, and, as to the others, it seemed to him to make no difference at all.

Dr. Rosse was five feet eight inches high, and he weighed 160 pounds. He was straight and athletic in build. He was dark-complexioned, and he had dark hair and eyes. He was often taken for a foreigner. His manner was deliberate and reserved. He had very little to say to those who did not interest him, but was affable and communicative in the presence of those whose tastes were similar to his own. He did not like animals, and was not fond of children. He loved books, but did not collect or keep them. He used to say he had his library in his head, and, certainly, whatever he read he stored in his mind most carefully. He dived but little in other fields than the scientific, but, in that realm of never-ending spaces, his range was wide indeed. He was a member of the Episcopal Church, and was a constant attendant.

It is hard to value as a whole the work of a man like Rosse. As to what his proper place is "in the wall where the great ones stand," opinions differ widely. Indeed, he served in so many and so different capacities that perhaps no living person could properly assign his position in the hall of fame. But certainly we may say at least this, namely, that, in the field of mental and nervous diseases, and in the field of medical jurisprudence, and in the field of geographical exploration, and, most of all perhaps, in the field of editing and general authorship, Dr. Rosse's work possesses much of a high and enduring value. Over and above his contributions to science, furthermore, we have the man himself—a being outspoken, fearless, honest, sincere, magnetic—a personality to be known, to be loved, and to be remembered.

A REPLY TO DR. WALSH'S "THE SUPPOSED WAR-
FARE BETWEEN MEDICAL SCIENCE AND
THEOLOGY."

BY WILLIAM J. CRUIKSHANK, M.D.,

of Brooklyn, N. Y.



WHEN the article written by Dr. James J. Walsh, entitled "The Supposed Warfare between Medical Science and Theology," first appeared,* I read it with keen interest but with little leisure. The article then impressed me as setting forth many erroneous conclusions, and I therefore decided that I would, as soon as the opportunity offered, examine it in detail, with a view to ascertaining the truth or falsity of that impression. The arrival of that opportunity was so long deferred by time-destroying professional work, that it is only recently that I read it with the care and undivided attention which the proper analysis of such a paper requires. The more leisurely and reflective reading of Dr. Walsh's article, which was written in answer to a contribution of mine, has fully confirmed the impression which it first made upon my mind and has forced me to the conclusion that few, if any, of the assertions contained in it will bear analysis, and that by reason of that fact they should not be permitted to stand uncontradicted. As considerable time has elapsed since the article was published, many of the specific statements contained in it have doubtless escaped the memory of my readers. As I am now desirous of adding a few words to "this little discussion," as Dr. Walsh has called it, I beg permission briefly to recall the gist of Dr. Walsh's contention, as set forth on that occasion.

Perhaps it will be remembered that by far the most important part of my contribution† is a very interesting letter from the pen of Dr. Andrew D. White, dealing with the subject under discussion. Dr. Walsh, therefore, begins his answer by informing his readers that he contradicts "practically everything" that Dr. White has to say in his book, "A History of the Warfare of Science with Theology in Christendom," regarding the "Supposed Warfare between Medical Science and Theology." Dr. Walsh

* *Medical Library and Historical Journal*, Sept., 1906.

† *Idem.*, March, 1906.

asserts that Dr. White has made "certain palpable errors in history"; that the popes of the middle ages did not forbid the study of anatomy and of chemistry; that, on the contrary, they encouraged such studies; and he incorporates in his article translations of certain papal bulls, one issued by Boniface VIII in 1300; the other by John XXII in 1326; and he cites a number of authorities on the history of chemistry, together with the papal bull *Spondent pariter*, as proof of the truth of those assertions.

Dr. Walsh goes on to say that the "ages immediately preceding the so-called Reformation" have been greatly slandered and maligned, "though," he says, "they gave to us the foundation of everything worth while in our modern life."

He then vigorously denounces Dr. White's "utterly incomprehensible paragraph" on the reign of Pope John XXII and on his bull, *Super illius specula*. He claims that any one reading that bull will need no further defense of the character of Pope John; and he tells us that the bull contains no evidence "of the superstitions which Dr. White so outspokenly declares it to contain," but that it is "a worthy expression of the fatherly feeling of the head of Christendom that might well have been made at any, even the most enlightened period of the world's history." He claims that when Dr. White refers to Pope John XXII as having been sunk in superstition to the extent of being fearful of losing his life at the hands of sorcerers he is engaged in following a history myth.

Dr. Walsh says that the idea that the advancement of medical science was ever opposed by the popes is entirely imaginary. Continuing, he makes use of the following language:

"Now it is only fair to devote a few words to the originator of this little discussion, Dr. Cruikshank. I think that the carelessly uttered words of his address will have brought about one very decided benefit. Hereafter we will hear no more of papal prohibitions of anatomy or chemistry, and medical history will be, by that much, nearer the truth." Then follow two parallel columns; one column containing, according to Dr. Walsh, the historical facts; the other containing what he is pleased to call my erroneous assertions.*

We are next informed by Dr. Walsh that the persecution and imprisonment of Galileo was a mere "incident" and "not a por-

* *Med. Lib. and Hist. Jour.*, 1906, Sept., pp. 283-284.

tion of a set policy"; that "only those who are bigotedly intolerant, now view the case of Galileo in the light in which it has been placed by Dr. White in his book." He says that "works of imagination, unless of very serious import, never find a place on the Index." He asserts that an opinion from Prof. Ernest Haeckel on a scientific subject is worthless; that Haeckel once practised fraud and deceit in the preparation and publication of certain pictures of embryos and that he has long been discredited by German scientists; that Virchow considered him a disgrace to German science.

Dr. Walsh remarks—in charitable exculpation of my shortcomings—that, "Dr. Cruikshank has been unfortunate in the selection of his reading"; that loss of faith in the eternal verities is responsible for that fact; that as his authorities on history are false he cannot be blamed for making false statements; that "only his authorities can properly be held responsible."

Dr. Walsh tells us that it is not the custom to teach the history of medicine at Fordham University in the same manner in which it is generally taught in American Colleges; that at Fordham they try to get at the truth and to help others to do so.

He mentions that "the story of the popes and what they did for medical education is an unwritten chapter which will shortly appear." This, then, I believe, is the substance of Dr. Walsh's answer.

Now, if even the *casual* reader of history takes only a cursory view of the present discussion and, in that manner, compares the statements of fact made by Dr. Walsh with the writings on this subject of other teachers of history—such, for example, as Professor John W. Draper, Henry C. Lea, Herbert Bruce, Ernest von Meyer, Thomas H. Huxley, Edward Gibbon, Edward B. Tylor, Andrew Lang, Max Müller, Guizot, Whewell, Dollinger, Rydberg, or the innumerable French, German, English, Italian and Spanish authorities cited by Dr. White in the foot-notes of his book, he will, at once, become impressed with the fact that those statements materially differ. He will observe that the differences present themselves in the form of singular omissions on the part of Dr. Walsh to refer to historical events which at the very first glance would seem to have important bearing on the questions raised. If the comparison be continued a little further, the reader soon learns that these omissions occur so frequently, and bring him to such misleading conclusions, that he is con-

strained to the opinion that they cannot possibly be charged to oversight, mistake, or other accident; but must be the result of some method or motive peculiar to the author. Now, then—if the reader here becomes a trifle analytical—he begins to suspect what that motive really is, and he finds himself interested either to verify or to dissolve his suspicions. With the formation of a positive conclusion still in abeyance, he examines the title page of one of Dr. Walsh's contributions, to find out exactly who the writer may be, and he there discovers that Dr. Walsh is a professor of history in a Jesuit College. Instantly the reader feels that he has in his possession the key to the whole situation. If, in the course of his reading, he has become somewhat familiar with the kind of argument usually employed by the strictly orthodox Christian controversialist, and, especially, if he is acquainted with the Jesuitical method, he now recognizes that, in his failure to state the whole truth concerning the history of the Church and its relation to science, Dr. Walsh is probably following out a well-formulated policy of concealment. But if the reader has had *some* scientific training, he does not decide hastily. While he believes that he now understands Dr. Walsh's motive, he reserves his final decision until he shall have reviewed the evidence; and so he again reads the article written by Dr. Walsh entitled "Pope John and the Supposed Bull Forbidding Chemistry,"* and he there finds that which confirms his suspicions. He finds that in that article Dr. Walsh teaches that the achievements in chemistry of Raymond Lully, Albert the Great, Thomas Aquinas, Arnold of Villanova and Roger Bacon are to be regarded as proof that the study of that branch of science was not only permitted, but encouraged, by Pope John XXII, and also by other popes of the Middle Ages. Now, the reader is sufficiently acquainted with the lives of these men, to know that all of them, with the exception of Thomas Aquinas, were persecuted by the Church. He knows, also, the why and wherefore of the single exception. He knows that Thomas Aquinas had no quarrel with papal rule, for the obvious reason that he was himself the moving spirit of the superstitious and despotic theological system of his day; that his philosophy and teaching diverted rational thought into channels of unreason and thus hindered and delayed for hundreds of years the progress of all branches of science. The reader knows

* *Med. Lib. and Hist. Jour.*, 1905, III, pp. 248-263.

that having so much to his credit, Thomas was, in 1323, canonized by Pope John XXII. He knows that Raymond Lully, notwithstanding that he was a Christian zealot, was hampered and hindered in his attempts at scientific reasoning, and was finally denied by the Church the right of freedom of thought and speech; and that after his death the Holy See branded him an heretic and ordered his works placed on the Index. He knows that Albert the Great was charged by the Church with magic and that the names of some of his scientific writings were placed on the Index—where they may be found to-day. He knows that Church authority hounded and persecuted until his death the great physician and chemist, Arnold of Villanova; that he was charged with heresy, excommunicated and driven from city to city and country to country, on the charges of magic, of selling his soul to the devil, and declaring that the bulls of the popes were only the work of a man and that “charity is better than prayer or even than the mass.” The reader knows that Roger Bacon, the greatest chemist and scientific reasoner of them all, was constantly thwarted in his endeavors at scientific achievement; that the Church persistently and vigorously opposed his attempts at experimental research, and that, finally, on a charge of “Compact with Satan and suspected novelties,” he was actually, for ten years, imprisoned by papal authority. Because of these facts, the reader knows that these great men achieved their knowledge of chemistry, not with the permission of the Roman Church, but in spite of it. He knows that whatever they accomplished along rationalistic lines was done by persistent effort made in the very teeth of ignorant and superstitious ecclesiastical opposition, papal tyranny and despotism. And yet he finds that Dr. Walsh, in a public discussion of the subject, conceals these facts, and actually cites these chemists as products, and their achievements in science as proofs, of the intellectual freedom accorded the scientist by the Roman Church of the Middle Ages. Is not that reader justified in forming a conclusion concerning the policy which apparently governs Dr. Walsh in his discussion of these subjects? In the light of the evidence before him, can there be the slightest doubt in his mind on that question? Is it not reasonable for him to conclude, that the author of such consistent misrepresentation carries a brief for the Church? If, then, in a public discussion of the history of science, and its relation to theology, Dr. Walsh appears in the forum as an advocate for the Roman Catholic

Church, instead of as an impartial teacher of history, is not one justified in taking that fact into serious consideration when estimating the true value of his representations? Now, if a more comprehensive view of Dr. Walsh's contributions to the literature of this subject be taken, it forces us to the conclusion that no one can hope to find in *any* of his writings, where the reputation of the Church of Rome is at stake, the whole truth fully and squarely set forth. We become convinced:

First, That owing to the equivocal position which, as a teacher in an orthodox Christian institution of learning, Dr. Walsh is compelled, by theologic dogma, to occupy, he is not, and cannot be free, to teach the truth concerning the history of the Church and its relation to science.

Secondly, That, because of that false position, he not only dares not state certain facts which, by virtue of his office, as a Professor of the History of Medicine in an institution devoted to historical and scientific research, he is, in all conscience, bound to teach, but must juggle with, suppress or conceal them.

Third, That his controversial methods are Jesuitical, in that they are evasive, politic, misleading, and, therefore, pernicious.

Fourth, That for these reasons, his writings and public utterances on the relation of the Church to science are rendered unreliable, and are everywhere valueless, except to the Roman Catholic Church.

Now if it is true (as may be shown by a reference to "The Dogmatic Constitution of Catholic Faith"* as handed down by the Vatican Council in 1870, during the reign of Pope Pius IX, and to the encyclical letter on "Modernism" issued on the eighth day of September, 1907, by the present reigning Pontiff Pius X) that Dr. Walsh is prohibited by his Church from teaching the truth concerning her history, and that she threatens him with the severest penalties both here and hereafter if he dares to teach either science or history which conflicts with her dogmas, let us see whether he obeys her commands. Is it true, as I have asserted, that in her interests he juggles with, suppresses and conceals the facts? Let us proceed to an examination of that portion of his answer which deals with Pope John XXII and see if it will help us to answer these questions.

* For a ready reference see Draper's "Religion and Science," Chapter XII.

In referring to the bull "*Super illius specula*," issued by John in 1326, Dr. Walsh takes exception to Dr. White's statement, that history shows the bull in question to have had a deterrent influence on the study of chemistry; and he asserts that the bull has been grossly misrepresented and its author slandered. In order that there may be no misunderstanding either Dr. Walsh or Dr. White on this question, I beg permission to place side by side the exact language used by these gentlemen:

DR. WHITE:

"It is a pity that Dr. Walsh does not quote in full Pope John's other and much more interesting bull—*Super illius specula*—of 1326. One would suppose from the Doctor's account that this pontiff was a kindly and rational scholar seeking to save the people from the clutch of superstition. This bull of 1326 shows Pope John himself, in spite of his infallibility, sunk in superstition the most abject and debasing; for, in this bull, supposed to be inspired from wisdom from on high, Pope John complains that both he and his flock are in danger of their lives by the arts of the sorcerers. He declares that such sorcerers can shut up devils in mirrors, finger-rings and phials, and kill men and women by a magic word, that they had tried to kill him by piercing a waxen image of him with needles, in the name of the devil. He, therefore, not only in this bull, but in brief after brief, urged bishops, inquisitors and other authorities, sacred and secular, to hunt down the miscreants who thus afflicted the faithful, and he especially increased the power of the inquisitors in various parts of Europe, for this purpose. This bull it was, and others to the same purpose, which stimulated that childish fear and hatred against the investigation of nature which was felt for centuries and which caused chemistry to be known more and more as one of the 'seven devilish arts.'"

DR. WALSH:

"After this tirade against the bull and Pope John XXII why did not President White himself quote the bull? Since he leaves the task for me, I am only too glad to do it. Any one who reads it will need no further defense of the character of Pope John XXII against the aspersions of those who pronounce judgment against him without ever having seen the documents on which their condemnation of him is founded. Any one who will read the actual bull in question side by side with President White's utterly incomprehensible paragraph, will appreciate better than any words of mine can tell why it is that I, together with so many fellow-Catholics, have strenuously objected to the publication of statements, supposedly founded on papal documents, which either have no existence or are utterly misrepresented by the unfortunate historical tradition which insists in seeing nothing good in the ages immediately preceding the so-called Reformation, though they gave to us the foundation of everything worth while in our modern life. A translation of the bull in question follows.

"Now, here is a papal document that, far from containing any of the superstitions that President White so outspokenly declares it to contain, is a worthy expression of the fatherly feelings of the head of Christendom that might well have been made at any, even the most enlightened, period of the world's history. The two sentences on which all of President White's serious accusations are founded are simple expressions of the Pope's solicitude for his flock on hearing

of some of the practices that they are said to give themselves up to. He does not say, even, that sorcerers can shut up devils in mirrors, finger-rings and phials, but uses the hypothetical expression that in these things by magic art evil spirits are to be enclosed. The bull has no reference at all to the killing of men and women by a magic word, and as to where President White found that Pope John declares in this bull that sorcerers had tried to kill him by piercing a waxen image with needles in the name of the devil, it is impossible to understand. As I said before, Dr. White has been engaged in following a history myth, and this is further evidence in support of my statement."

Now, admitting, for the sake of argument, that Dr. Walsh has translated the bull with absolute accuracy, although the evidence on that point is by no means conclusive, we find, upon examination of it, that when Dr. White says: "for in this bull, supposed to be inspired from wisdom on high, Pope John complains that both he and his flock are in danger of their lives by the acts of sorcerers"; and also that when Dr. White states that the words of the bull read: "they"—meaning the sorcerers—"had tried to kill him" (Pope John) "by piercing a waxen image of him with needles, in the name of the devil," he is in error. The bull, according to the translation of Dr. Walsh, does not state, concerning Pope John XXII, that "both he and his flock are in danger of their lives by the acts of the sorcerers." It does not read, as Dr. White has stated: "that such sorcerers can kill men and women by a magic word," nor that: "they had tried to kill him" (Pope John) "by piercing a waxen image of him with needles, in the name of the devil."

Now, having agreed with Dr. Walsh that his translation of the bull does not contain certain definite phraseology attributed to it by Dr. White, can we also agree with Dr. Walsh in his statement that Dr. White has misrepresented either Pope John XXII or the historic facts concerning the effects of his reign on the study of chemistry? If we are neither prejudiced nor biased, but interested only in obtaining the truth of the matter, we are compelled to answer this question in the negative, for the reason, as will be shown, that the writings of other historians disclose the

truth of Dr. White's assertions. The explanation of the alleged misrepresentation lies in the simple fact that, in his letter to me, Dr. White, in referring to the bull *Super illius specula*, makes use of the following words: "for in this bull." Take these four words from his letter, and every statement concerning Pope John XXII contained in it is verified by consistent, contemporaneous historical events, attested by documentary evidence, as set forth by the most reliable authority. "The bull," says Dr. Walsh, "has no reference at all to the killing of men and women by a magic word; and as to where President White found that Pope John declares *in this bull* that sorcerers had tried to kill him by piercing a waxen image with needles in the name of the devil, it is impossible to understand." Perhaps no better example of Jesuitism has ever been written! An examination of the facts will show at a glance that Dr. Walsh is pettifogging and hiding the truth behind the words: "*where in this bull.*" Dr. Walsh must certainly be aware of the fact that in the Middle Ages, in Christendom, the figurine was constantly used by the sorcerer in the practice of his art. He must know that we have the best authority for the statement that Pope John XXII did really declare, in the year 1317, that certain sorcerers had attempted his life; and that those alleged sorcerers, as the result of the findings of a commission, which John himself appointed for that express purpose, were tried and convicted of the alleged attempt at killing him; and that they, in consequence of that conviction, suffered the death penalty. Dr. Walsh must be sufficiently familiar with the historical account of that affair to know that those alleged sorcerers confessed, under the influence of torture, that in their attempts to kill Pope John XXII they had recourse to the figurine, "in the fabrication of which they were skilled"; and that they used them in the name of the devil. Dr. Walsh cannot deny that somewhere about the month of June, 1326, the very year in which was issued the bull *Super illius specula*, history informs us that another and similar attempt was made by sorcerers upon the life of John XXII; and on that occasion figurines were used also. He cannot have forgotten the fact that those sorcerers were afterward, for that offense, executed by Pope Benedict XII. Now, if it be shown by other competent authority that Dr. White is absolutely correct in his statements concerning Pope John XXII, but that he has simply, in his letter to me, referred to the wrong document in proof of some of them, then the words

used by Dr. Walsh in his article: "Where President White found that Pope John declares *in this bull* that sorcerers had tried to kill him by piercing a waxen image with needles, in the name of the devil, it is impossible to understand," become very significant. They force the reader to no other conclusion than that Dr. Walsh knew at the time he wrote them that they were calculated to mislead. They become *prima facie* evidence that Dr. Walsh must have been aware, when he wrote his Answer, that although Dr. White was in error in referring certain definite language to the bull *Super illius specula*, that gentleman was unquestionably correct as to all the historical facts. If this latter statement be true, then Dr. Walsh is seen to have a remarkable method of teaching history. It is not as if we could attribute his peculiar manner of disguising the truth to a possible lack of knowledge of the life and history of Pope John XXII. No one in all reasonable certainty knows better than does Dr. Walsh the true story of that pontiff. His subtle emphasis of the words "*Where, in this bull,*" denies the possibility on his part of either ignorance or error and demonstrates clearly that for the purposes of his case it was his intention when he wrote them to take advantage of a slip of Dr. White's memory. Analysis will show that the evidence on this point is without a flaw. Let us see if this is not the fact.

Dr. Walsh begins his answer by saying:

"Of course, it is evident to any one who knows President Andrew D. White's work, 'A History of the Warfare of Science with Theology in Christendom,' that when I answered Dr. Cruikshank's article on 'Some Relations of the Church to Scientific Progress,' which appeared in the *Medical Library and Historical Journal* for July, 1905, I was directly contradicting practically everything that President White has to say in his book with regard to the supposed warfare between medical science and theology."

Now, in order to contradict the contents of Dr. White's book, Dr. Walsh must, of course, have read the book. Having read it, he could not help knowing that it must have been the result of a hurried oversight, when Dr. White, in his letter to me, referred the specific incident, of the attempt to kill Pope John XXII, by "piercing a waxen image of him with needles, in the name of the devil," to the bull *Super illius specula*; because Dr. White's book *does not quote the bull as authority for that*

historic event. For proof of the truth of this latter assertion, I beg to refer the reader to page 384, Vol. I, of that work, where he will find that the author uses the following language: "Thus the horror of magic and witchcraft increased on every hand, and in 1317, Pope John XXII issued his bull *Spondent pariter*, leveled at the alchemists, but really dealing a terrible blow at the beginnings of chemical science. That many alchemists were knavish is no doubt true, but no infallibility in separating the evil from the good was shown by the papacy in this matter. In this, and in sundry other bulls and briefs, we find Pope John, by virtue of his infallibility as the world's instructor in all that pertains to faith and morals, condemning real science and pseudo-science alike. *In two of these documents, supposed to be inspired by wisdom from on high, he complains that both he and his flock are in danger of their lives by the arts of the sorcerers*; he declares that such sorcerers can send devils into mirrors and finger-rings, and kill men and women by a magic magic word; that they had tried to kill him by piercing a waxen image of him with needles in the name of the devil. He therefore called on all rulers, secular and ecclesiastical, to hunt down the miscreants who thus afflicted the faithful, and he especially increased the powers of inquisitors in various parts of Europe for this purpose."

Now, a reference to the footnotes in Dr. White's book, page 392, Vol. I, will disclose that the author quotes Viktor Rydberg's "Magic of the Middle Ages," page 177, together with "The History of the Inquisition," by Charles Henry Lea, as his authority for the statement that Pope John XXII complained that "both he and his flock are in danger of their lives by the arts of the sorcerers"; and not the bull *Super illius specula*. We there observe that Dr. White says: "In two of these documents, supposed to be inspired by wisdom from on high"; and that he does not say in his book—as he said in his letter to me—"for in this bull." This shows conclusively that while sure of the facts, Dr. White, in dictating his letter, had probably trusted his memory in naming his authority.

Now, when we come to examine Viktor Rydberg's "Magic of the Middle Ages," one of the books to which Dr. White refers, we find at page 177 the following language:

"The highest authorities of the Church constantly nourished that awe of the devil and his tools, which filled the mind, and

they could do it without scruple, being themselves seized with the same terror.

"Thus John XXII promulgated, A.D. 1317, two letters in which he complains that he himself, not less than countless numbers of his sheep, was in danger of his life by the arts of sorcerers, who could send devils into mirrors and rings, and make away with men by their words alone. He mentions especially that his enemies have sought to kill him by piercing dolls which they had baptized in his name, by needles, invoking the aid of the devil. It is needless to point out what influence such proclamations from Christ's Vicar, the Infallible Head of the Church, would exercise over the common mind." And when we take up the other authority to which Dr. White refers, "A History of the Inquisition of the Middle Ages," by Henry Charles Lea, we there find, fully set forth, the story of the attempt to kill Pope John, by "piercing waxen images of him, in the name of the devil," together with accounts of John's belief in sorcery, magic and other superstitions. On pages 452 and 453, Vol. III, of that work, the author says: "The growing importance of sorcery in popular belief received a powerful impetus from John XXII, who in so many ways exercised on his age an influence so deplorable. As one of the most learned theologians of his day, he had full convictions of the reality of all the marvels claimed for magic; and his own experience led him to entertain a lively dread of them. The circumstances of his election were such as to render probable the existence of conspiracies for his removal, and he lent a ready ear to suggestions concerning them. His barbarity toward the unfortunate Hugues, Bishop of Cahors, has already been alluded to, and before the first year of his reign was out, he had another group of criminals to dispose of. In 1317 we find him issuing a commission to Gaillard, Bishop of Reggio, and several assessors, to try a barber-surgeon named Jean d'Amant, and sundry clerks of the Sacred Palace, on the charge of attempting his life. Under the persuasive influence of torture they confessed that they had at first intended to use poison, but finding no opportunity for this, they had recourse to figurines, in the fabrication of which they were skilled. They had made them under the invocation of demons; they could confine demons in rings and thus learn the secrets of the past and of the future; they could induce sickness, cause death, or prolong life, by incantations, charms and spells, consisting simply of words. Of

course, they were condemned and executed; and John set to work vigorously to extirpate the abhorred race of sorcerers to which he had so nearly fallen a victim. We hear of proceedings against Robert, Bishop of Aix, accused of having practiced magic arts at Bologna; and John, regarding the East as the source whence this execrable science spread over Christendom, sought to attack it in its home. In 1318, he ordered the Dominican Provincial in the Levant to appoint special inquisitors for the purpose in all places subject to the Latin rite, and he called upon the Doge of Venice, the Prince of Achaia and the Latin Barons, to lend their effective aid. He even wrote to the Patriarch of Constantinople and the Oriental Archbishops, urging them to assist in the good work. Not satisfied with the implied jurisdiction conferred on the inquisition by Alexander IV, in 1320, he had letters sent out by the Cardinal of St. Sabma, formally conferring it fully upon inquisitors, and urging them to exercise it actively. Subsequent bulls stimulated still further the growing dread of magic by expressing his grief at the constant increase of the infection which was spreading throughout Christendom, and by ordering sorcerers to be publicly anathematized and punished as heretics and all books of magic lore to be burned. When he warned all baptized Christians not to enter into compacts with hell, or imprison demons in rings or mirrors, so as to penetrate the secrets of the future, and threatened all guilty of such practices that if they did not refrain within eight days they should be subject to the penalties of heresy, he took the most effective means to render the trade of the sorcerer profitable and to increase the number of his dupes." In the footnotes contained in his book, Lea refers to the documentary evidence supporting his statements of fact.

If the reader will now take the trouble to examine the chapter on "Sorcery and Occult Arts," in the same work, he will there learn (page 458, Vol. III) of the alleged attempt by the sorcerers in 1326 to kill Pope John. The author speaks of it in connection with a charge of sorcery against Pierre de Vie, a nephew of Pope John, as follows:

"A similar case came to light at Toulouse in June, 1326, when some sorcerers were discovered who had undertaken to make away with King Charles le Bel by means of figurines. They were promptly dispatched to Paris, and the matter was taken in hand by the secular court of the Chatelet. It had all the resources

of torture at its command, and its speedy and vigorous justice undoubtedly soon consigned them to the stake, although Pierre de Vie, a favored nephew of John XXII, who had been inculpated in their confessions, was pronounced innocent. It was probably not long after this that *a similar attempt was made on the life of John XXII, though the culprits escaped until 1837, when they were tried and executed by Benedict XII.*"

We observe, therefore, that all the statements concerning Pope John XXII, which are contained in Dr. White's letter, are concurred in by Lea, the difference in the two accounts being, of course, that Lea does not refer certain definite phraseology to the bull *Super illius specula*, although he cites this bull, together with other papal documents of John XXII, as evidence of his superstition and of his debased character.

Thus it will be seen that at the very threshold of our examination of the questions at present under consideration, we are confronted with the evidence that Dr. Walsh is employing certain well-known methods by the use of which historical truths may be concealed. We have been engaged up to the present time with only that part of his article which deals with Pope John XXII; and, even in that short space, our examination discloses its false and misleading character. Further, Dr. Walsh unhesitatingly assures his readers that when Dr. White refers to Pope John XXII as one who, "in spite of his infallibility, was himself sunk in superstition the most abject and debasing," he (Dr. White) "is engaged in following a history myth." Whereas we are informed by Lea, "the most eminent and the most scrupulously accurate of living American medievalists, whom all the world recognizes as an authority":

(1) That, "Popular belief in sorcery received a powerful impetus from John XXII."

(2) That, "he exercised on his age an influence (so) deplorable."

(3) That, he firmly believed in sorcery; and also that he himself had a great dread of the same.

(4) That in 1317 he issued a commission to one of his bishops, one Galliard of Reggio, to try certain alleged sorcerers for attempting his life.

(5) That the name of one of these alleged sorcerers, a barber-surgeon, was Jean d'Amant.

(6) That the others were identified as clerks of the sacred palace.

(7) That, under the influence of torture, those alleged sorcerers confessed that they had had recourse to figurines in their attempts to kill Pope John; that they had made these figurines under the influence of demons; that they could conceal such demons in rings and thus learn the secrets of the past and of the future; that they could induce sickness, cause death or prolong life by incantations, charms and spells, consisting of magic words.

(8) That Pope John XXII firmly believed that they could do these things and that by reason of his authority they were condemned and executed for attempting his life in the manner already described.

(9) That Pope John XXII so thoroughly believed in sorcery that he used his Pontifical power "in all places subject to the Latin rite" for the purpose of extirpating the "abhorred race of sorcerers to which he had so nearly fallen a victim."

(10) That he even went so far as to write to the Patriarch of Constantinople and the Oriental Bishops to assist him in the work of exterminating the alleged sorcerers.

(11) That not being satisfied with the implied jurisdiction conferred on the inquisition by Alexander IV: "in 1320, he had letters sent out by the Cardinal S. Sabina, formally conferring it fully on inquisitors and urging them to exercise it more actively."

(12) That he issued subsequent bulls which "stimulated still further the growing dread of magic by expressing his grief at the constant increase of the infection which was spreading throughout Christendom and by ordering sorcerers to be publicly anathematized and punished as heretics and all books of magic lore to be burned."

And yet, in spite of all these well attested historical facts, the article by Dr. Walsh would lead us to conclude that any account which expresses a belief in them is mythical.

Now this is by no means a new method of teaching the history of the Roman Pontiffs. We are quite familiar with it, because it is used by those writers on that and kindred subjects, who carry briefs for the Church. It is called the Jesuitical method. It is not infrequently adopted by biased Protestant controversialists, although, owing to a lack of training, they are not usually capable of applying it successfully. No writer, either Catholic or Protestant, with which I am familiar, has used this method of

argument more conspicuously than has Dr. Walsh. The question may arise: of what does the Jesuitical method consist? what is the meaning of the word Jesuitical? If the reader will turn to the word, as it is defined in any of the modern dictionaries, he will there learn that although it had its origin in the sacred name of Jesus, it has long since come to be synonymous with intrigue and deceit. Let him, for example, consult the Century Dictionary. As that happens to be at hand I will quote its definition:

“JESUITICAL”—“Designing, crafty, politic, insinuating; an opprobrious term: (“He has been accused of a Jesuitical tendency, of a disposition to find arguments in favor of acts after they have been performed.”)

For a description of the manner in which, for centuries, this degrading method has been utilized by the Church, I would refer the reader to Draper’s “Intellectual Development of Europe,” pages 220 to 223, inclusive. He will there see that: “To the Jesuit all things were proper, for the sake of the Church. It was his business to consider how the affair he had in hand was to be the most surely accomplished; to resort to justifiable means, if these should appear sufficient; if not—to unjustifiable—to the spiritual weapon—but, also, to be prepared with the carnal; to sacrifice candor, if the occasion should require; if necessary, even the truth; remembering that the end justifies the means—if that end is the good of the Church.”

Now, it is this Jesuitical element; this method of juggling the facts to suit his particular purpose, subtly ramifying through all the writings of Dr. Walsh on the history of the Church and its relation to science, that is so objectionable, and which renders valueless contributions that might otherwise be interesting and instructive. As it is, we are compelled suspiciously to analyze them, that they may be compared with the works of reputed historians, before any statement contained in them can finally be accepted.

Now, with this in mind, let us examine further the claims which Dr. Walsh makes for the Church, in the matter of her relation to science:

Dr. Walsh asserts that far from being hostile to the advancement of science the Church contributed to its progress. He has chosen to base much of his contention upon the character of Pope John XXII; and especially upon his bull *Super illius specula*, already referred to. He says: that Pope John XXII and his

decretals could not have been inimical to the study of chemistry and other branches of science, because he "was a true father of Christendom"; and that his bull *Super illius specula* is a papal document so thoroughly free from superstition that it might well have been issued "in any, even the most enlightened period of the world's history"; and that anyone reading it will need no further defense of the character of John. He further declares that John "was really one of the greatest popes of the century in which he lived."

In these assertions Dr. Walsh evidently recognizes that "the essential principle of the papacy, that the Roman Pontiff is the Vicar of Christ upon earth, necessarily obtrudes his personal relations upon us." It is apparent that he believes no true understanding of the relations which existed between attempts at scientific achievement and ecclesiastical authority of the Middle Ages possible, without a proper consideration and appreciation of the personal character of the popes. In this I hold so entirely with Dr. Walsh, that before discussing the bull *Super illius specula*, I shall devote a few words to the life and character of John XXII, and further, I shall review briefly the popes that preceded him and say something of the times in which he lived, the inheritance and the environment which reasonably may be held to have moulded his ideals and his disposition, and to have influenced his acts and utterances.

Beginning at about the middle of the eighth century and following papal history along down, we learn as follows:

"On the death of Pope Paul I, who had attained the Pontificate, A. D. 757, the Duke of Nepi compelled some bishops to consecrate Constantine, one of his brothers, as pope; but more legitimate electors subsequently, A. D. 768, choosing Stephen IV, the usurper and his adherents were severely punished; the eyes of Constantine were put out; the tongue of the Bishop Theodorus was amputated, and he was left in a dungeon to expire in the agonies of thirst. The nephews of Pope Adrian seized his successor, Pope Leo III, A. D. 795, in the street, and, forcing him into a neighboring church, attempted to put out his eyes and cut out his tongue; at a later period this pontiff trying to suppress a conspiracy to depose him, Rome became the scene of rebellion, murder, and conflagration. His successor, Stephen V, A. D. 816, was ignominiously driven from the city; his successor, Paschal I, was accused of blinding and murdering two ecclesiastics in the

Lateran Palace; it was necessary that imperial commissioners should investigate the matter, but the pope died, after having exculpated himself by oath before thirty bishops. John VIII, A. D. 872, unable to resist the Mohammedans, was compelled to pay them tribute; the Bishop of Naples, maintaining a secret alliance with them, received his share of the plunder they collected. Him, John excommunicated, nor would he give him absolution unless he would betray the chief Mohammedans and assassinate others himself. There was an ecclesiastical conspiracy to murder the pope; some of the treasures of the Church were seized; and the gate of St. Pancrazia was opened with false keys to admit the Saracens into the city. Formosus, who had been engaged in these transactions, and excommunicated as a conspirator for the murder of John, was subsequently elected pope, A. D. 891; he was succeeded by Boniface VI, A. D. 896, who had been deposed from the diaconate, and again from the priesthood, for his immoral and lewd life. By Stephen VII, who followed, the dead body of Formosus was taken from the grave, clothed in the papal habiliments, propped up in a chair, tried before a council, and the preposterous and indecent scene completed by cutting off three of the fingers of the corpse and casting it into the Tiber; but Stephen himself was destined to exemplify how low the papacy had fallen; he was thrown into prison and strangled. In the course of five years, from A. D. 896 to A. D. 900, five popes were consecrated. Leo V, who succeeded in A. D. 904, was in less than two months thrown into prison by Christopher, one of his chaplains, who usurped his place, and who, in his turn, was shortly expelled from Rome by Sergius III, who, by the aid of a military force, seized the pontificate, A. D. 905. This man, according to the testimony of the times, lived in criminal intercourse with the celebrated prostitute Theodora, who, with her daughters Marozia and Theodora, also prostitutes, exercised an extraordinary control over him. The love of Theodora was also shared by John X; she gave him first the archbishopric of Ravenna, and then translated him to Rome, A. D. 915, as pope. John was not unsuited to the times; he organized a confederacy which perhaps prevented Rome from being captured by the Saracens, and the world was astonished and edified by the appearance of this warlike pontiff at the head of his troops. By the love of Theodora, as was said, he had maintained himself in the papacy for fourteen years; by the intrigues and hatred of her

daughter Marozia he was overthrown. She surprised him in the Lateran Palace; killed his brother Peter before his eyes; threw him into prison, where he soon died, smothered, as was asserted, with a pillow. After a short interval Marozia made her own son pope, as John XI, A. D. 931. Many affirmed that Pope Sergius was his father, but she herself inclined to attribute him to her husband Alberic, whose brother, Guido, she subsequently married. Another of her sons, Alberic, so called from his supposed father, jealous of his brother John, cast him and their mother Marozia into prison. After a time Alberic's son was elected pope, A. D. 956; he assumed the title of John XII, the amorous Marozia thus having given a son and a grandson to the papacy. John was only nineteen years old when he thus became the head of Christendom. His reign was characterized by the most shocking immoralities, so that the Emperor Otho I was compelled by the German clergy to interfere. A synod was summoned for his trial in the Church of St. Peter, before which it appeared that John had received bribes for the consecration of bishops, that he had ordained one who was but ten years old, and had performed that ceremony over another in a stable; he was charged with incest with one of his father's concubines, and with so many adulteries that the Lateran Palace had become a brothel; he put out the eyes of one ecclesiastic and castrated another, both dying in consequence of their injuries; he was given to drunkenness, gambling and the invocation of Jupiter and Venus. When cited to appear before the council, he sent word that "he had gone out hunting"; and to the fathers who remonstrated with him, he threateningly remarked "that Judas, as well as the other disciples, received from his master the power of binding and loosing, but that as soon as he proved a traitor to the common cause, the only power he retained was that of binding his own neck." Hereupon he was deposed, and Leo VIII elected in his stead, A. D. 963; but subsequently getting the upper hand, he seized his antagonists, cut off the hand of one, the nose, finger, tongue of others. His life was eventually brought to an end by the vengeance of a man whose wife he had seduced.

After such details it is almost needless to allude to the annals of succeeding popes: to relate that John XIII was strangled in prison; that Boniface VII imprisoned Benedict VII, and killed him by starvation; that John XIV was secretly put to death in the dungeons of the Castle of St. Angelo; that the corpse of Boniface was dragged by the populace through the streets. The

sentiment of reverence for the sovereign pontiff, nay, even of respect, had become extinct in Rome; throughout Europe the clergy were so shocked at the state of things, that, in their indignation, they began to look with approbation on the intention of the Emperor Otho to take from the Italians their privilege of appointing the successor of St. Peter, and confine it to his own family. But his kinsman, Gregory V, whom he placed on the pontifical throne, was very soon compelled by the Romans to fly; his excommunications and religious thunders were turned into derision by them; they were too well acquainted with the true nature of those terrors; they were living behind the scenes. A terrible punishment awaited the Anti-pope John XVI. Otho returned into Italy, seized him, put out his eyes, cut off his nose and tongue, and sent him through the streets mounted on an ass, with his face to the tail, and a wine bladder on his head. It seemed impossible that things could become worse; yet Rome had still to see Benedict IX, A. D. 1033, a boy of less than twelve years, raised to the apostolic throne. Of this pontiff, one of his successors, Victor III, declared that his life was so shameful, so foul, so execrable, that he shuddered to describe it. He ruled like a captain of banditti rather than a prelate. The people at the last, unable to bear his adulteries, homicides, and abominations any longer, rose against him. In despair of maintaining his position, he put up the papacy to auction. It was bought by a presbyter named John, who became Gregory VI, A. D. 1045.

More than a thousand years had elapsed since the birth of our Saviour, and such was the condition of Rome. Well may the historian shut the annals of those times in disgust; well may the heart of the Christian sink within him at such a catalogue of hideous crimes. Well may he ask, "Were these the vice-gerents of God upon earth—these, who had truly reached that goal beyond which the last effort of human wickedness cannot pass?"*

Continuing, we find the following facts:

Gregory VII (1073-85) was accused of poisoning his predecessors in order to obtain the popedom, and also of committing adultery with Matilda, Countess of Tuscany, who bestowed all her possessions on him.

Adrian IV (1154-59), the only Englishman who ever became pope, caused Arnold of Briscia to be burnt at the stake (1154)

* Draper's "Intellectual Development of Europe," Vol. I, pp. 378-382.

for preaching against papal corruption. It was this pope, who in virtue of the pretended donation of Constantine, made over to Henry II of England the right to take and govern Ireland, on condition of the pope receiving an annual tribute of one penny for each house. Alexander III reigned from 1159 to 1181. During his pontificate, the Lateran Council (1179) declared war against all heretics and a crusade against them was sanctioned by the pope. Innocent III (1198 to 1216) also preached a crusade. He claimed for his See universal empire and established the inquisition to support the claim. He excommunicated Philip II of France and put the whole nation under interdict. Afterwards he placed England under interdict; excommunicated John; bestowed the crown on Philip of France and published a crusade against England. He also instituted a crusade against the Albigenses and slaughtered them by thousands.

Gregory IX (1227 to 1241) formally established the inquisition; and, to support his ambition and the unbridled luxury of his court, raised taxes in France, England and Germany; excommunicated kings and incited nations to revolt. He was finally driven from Rome.

Innocent IV (1243 to 1254) through the agency of the Franciscan monks, conspired against the life of the Emperor Frederic. To avoid confronting his accuser, he retired to France, summoned a council at Lyons (1244) and excommunicated and deposed the emperor whom he coolly denominated his vassal. He also excommunicated the kings of Arragon and Portugal, giving the crown of the latter to the Count of Bologna. He persecuted the Ghibellines, and pretending to have the right of disposing of the crown of the Sicilies, offered it to Richmond, Earl of Cornwall, brother to Henry III of England. He made exorbitant claims to the bishoprics and benefices in England.

Boniface VIII (1294 to 1303) had his predecessor, Celestine, put in prison where he died. He openly styled himself "King of Kings," trafficked in indulgences, and declared all who excluded his claim to universal dominion excluded from heaven. He persecuted the Ghibellines, and ordered the city of Bragneste to be entirely destroyed. He was publicly accused of simony, assassination, usury, of living in concubinage with his two nieces and of having children by them; and of using the money he received for indulgences to pay the Saracens for invading Italy.

Clement (1305-1314), the immediate predecessor of Pope

John XXII, is noted for his cruel suppression of the order of Knights Templar. So as to appropriate their property, under false pretexts, he summoned to his court the grand master, issued a bull against the order, wherein he brought the most unfounded and absurd charges, and finally pronounced its abolition, having the grand master and many leading members burnt alive. After sharing the spoils of the Templars with the King of France, Clement V fixed his court at Avignon and gave himself publicly to the most criminal debaucheries. He preached a new crusade against the Turks and gave each new crusader the right to release four souls from purgatory. Dante places him in hell.

Now, what manner of man was Pope John XXII? What does unbiased history tell us concerning his private life, personal character and pontificate? Will our knowledge of these things have a tendency to increase or diminish our respect for his reign? Was he, for example, any the less a papal hypocrite than were the Vicars of Christ who preceded him? Was he less tyrannical, less cruel? Is there any reason, based on knowledge of his character, for supposing that he was not imbued with the spirit of his times? Let us examine these questions:

How, first of all, did this man come to be pope? His election occurred in August, 1316, after an interval of more than two years spent in rivalries and intrigues between the French and Italian cardinals. These men had been engaged in political strife over the vacant chair of St. Peter, since the death of John's immediate predecessor, Clement V, at Carpentres, April 20, 1314. Immediately after Pope Clement died, the cardinals whose duty it was to select his successor, "were torn with dissension." It appears that for various reasons they could not agree on the place at which the election should be held. The French cardinals insisted on Carpentres and the Italians demanded the right to convene in the Holy City. Carpentres, however, became the seat of their deliberations. But while the cardinals, shut up in the Episcopal palace, were awaiting the inspiration of the Holy Ghost, the French faction, under the lead of the nephews of Clement, "set fire to the palace and threatened the Italians with death, so that they were glad to escape with their lives by breaking a passage through the rear wall. After this the Church remained for two years without a visible head. But the policy of the French court required that the papal chair be occupied; and in 1316 Philip le Long was despatched by his brother, Louis Hutin, to

Lyons, to get the cardinals together. This was finally accomplished, Philip swearing that he would neither do them violence nor imprison them." For six months, says Lea, the business thus lagged without prospect of result, when Philip received the news of the sudden death of his brother and that the widowed queen claimed to be pregnant. The prospect of a vacant throne, or at least of a regency, awaiting him in Paris, rendered further dallying in Lyons insupportable, nor could he well depart without bringing his errand to a successful issue. Hastily consulting with his lawyers, it was discovered that his oath was unlawful and could not be observed. Consequently, he invited the reverend fathers to a colloquy in the Dominican convent, and when they were thus safely hived he sternly told them that they should not depart until they had chosen a pope. His guards blocked every entrance and he hastened off to Paris, leaving them to deliberate in captivity. Thus entrapped they made a merit of necessity, though forty days were still required before they proclaimed Jacques d'Ozo, cardinal of Porto, as the Vicar of Christ—the Italians having been won over by his oath that he would never mount a horse or mule except to go to Rome. This oath he kept during his whole pontificate of eighteen years, for he slipped down the Rhone to Avignon by boat, ascended by boat to the palace, and never left it, except to visit the Cathedral which adjoined it.

Such a process of selection was not likely to result in the evolution of a saint—and John XXII was its natural exponent. So much for the story of his election.

Now, with regard to the character and personality of John: I desire to set forth, side by side, abstracts from two descriptions of that pontiff; one given by Lea (Vol. III, page 66) and the other written by Dr. Walsh in his article on "Pope John," published in the *Medical Library and Historical Journal* for October, 1905:

DR. WALSH:

John has been the subject of slander in more ways than this with regard to the bull against chemistry. One of the most prominent of American encyclopædias, in its account of the popes named John, has little more to say with regard to most of them than the date of their birth and death. For John XXII (or as he really should be called, John XXI), it makes an

HENRY CHARLES LEA:

He was short in stature, but robust in health; choleric and easily moved to wrath; while his enmity once excited was durable, and his rejoicing when his foes came to an evil end, savored little of the Christian pastor. Persistent and inflexible, a purpose once undertaken was pursued to the end, regardless of opposition from friend or enemy. He was especially proud

exception, however, and says that he was noted for his avarice. For an avaricious man, few sovereigns that ever ruled in any country have left more traces of what we cannot help but call liberality. John founded the library of the popes at Avignon, endowed it especially, and kept five copyists constantly at work in it at his own expense. Their duty it was to reproduce manuscripts of all kinds, in order that they might, by exchange, acquire copies from other libraries, for this was the chief way in which libraries secured books in those days. As the pope reigned for over eighteen years, some idea of the immense expense attached to this work may be obtained. This library became one of the best in the world, at that time, as one can find by consulting Faucon's article on the "Library of the Popes at Avignon," in his collection of "Studies of the Libraries of French Schools and also of Athens and Rome," published at Paris in 1886.

According to the same authority, in his book on "The Arts at the Papal Court at Avignon under Clement V and John XXII," John encouraged the development of art and had many friends among the artists. He was a great patron of scholars and of learning; and several important literary works written under his pontificate were dedicated to him. This was not the ordinary effort of a writer to secure favor according to Faucon, but was a real manifestation of the appreciation of the writers for the friendly interest of the pope and his constant encouragement during the composition of their works. When, later on, Avignon became a distinct literary centre—as it did when Petrarch was there—not a little of this was due to the good-will aroused among literary people all over the world by John XXII during his long reign.

All this looks very little like the miser that he is supposed to have been. It is true that he established the contributions to the Holy See on a regular plane and laid down definite rules and laws for the collection of his revenues. It can readily be understood how this was

of his theologic attainments, ardent in disputation, and impatient of opposition. After the fashion of the time he was pious, for he celebrated mass almost every day, and almost every night he rose to recite the Office or to study. Among his good works is enumerated a poetical description of the Passion of Christ, concluding with a prayer; and he gratified his vanity as an author by proclaiming many indulgences as a reward to all who would read it through. His chief characteristics, however, were ambition and avarice. To gratify the former he waged endless war with the Visconti of Milan, in which, as we are assured by a contemporary, the blood shed would have incarnadined the waters of Lake Constance; and the bodies of the slain would have bridged it from shore to shore. As for the latter, his quenchless greed displayed an exhaustless fertility of resource in converting the treasures of salvation into current coin. He it was who first reduced to a system the "Taxes of the Penitentiary," which offered absolution at fixed prices for every possible form of human wickedness, from five grossi for homicide or incest, to thirty-three grossi for ordination below the canonical age. Before he had been two years in the papacy, he arrogated to himself the presentation to all the collegiate benefices in Christendom, under the convenient pretext of repressing simony, and from their sale we are told that he accumulated an immense treasure. Another more remunerative device was the practice of not filling a vacant episcopate from the ranks, but establishing a system of promotion from a poorer See to a richer one, and thence to archbishoprics, so that each vacancy gave him the opportunity of making numerous changes and levying tribute on each. Besides these regular sources of unhallowed gains, he was fertile in special expedients, as when in 1326, needing money for his Lombard wars, he applied to Charles Le Bel for authority to levy a subsidy on the churches of France, Germany being for the time cut off by his quarrel with Louis of

needed, if it will only be recalled that the popes were as yet scarcely ten years in Avignon, and that they were not situated as they had been in Rome; that everything was in confusion and that nothing was needed so much as a strong executive and administrative power to bring order out of the disturbed state of affairs and make the court of the popes worthy of the great office they represented.

How nobly John spent his revenues in another direction may be gathered from what is known of his interest in foreign missions. At his own expense, John sent the Franciscans to Persia, India, Turkestan, Ethiopia, and even to China. The state of the heathen nations was constantly a source of solicitude to him. To the persecuted Christians in Armenia, however, he proved to be not less than a father. It is recorded that, in 1324, he gave 30,000 gulden for various missionary and educational purposes in Armenia. This would be equal to more than a quarter of a million dollars at the present time. He realized that if the Mohammedans were to be won over to Christianity it would be accomplished mainly by an appeal to their intellects; accordingly, he founded a college in Armenia and encouraged in every way the missionaries who took up the work in that country. Realizing the unfortunate impression produced on the Eastern peoples by the state of division between the Eastern and Western Churches (or, as they are called, the Greek and Roman Churches), John tried earnestly to bring about a reunion between the Latin and the Greek Churches; for a time it looked as though he might have some success, but, like the other attempts, his efforts proved a failure.

This broadly cultured man of wide interests, deeply interested in the higher education, especially concerned with medical education, a true father of Christendom in his attempts to bring about the spread of the Christian religion and the union of the dissevered sects, is the one who is picked out for the chief slander, that he tried to prevent the study of chemistry, by a bull in

Bavaria. Charles at first refused, but finally agreed to divide the spoils, and granted the power in consideration of a papal grant to him of a tithe for two years; as a contemporary remarks: "*et ainsi sainte yglise, quant l'un le tont l'autre l'escorche.*" John proceeded to extort a large sum; from some he got a full tithe, from others a half; from others again, as much as he could extract, while all who held benefices under papal authority had to pay a full year's revenue. His excuse for this insatiable acquisitiveness, was that he designed the money for a crusade; but as he lived to be a nonagenary, without executing that design, the contemporary, Villani, is perhaps justified in the cautious remark: "Possibly he had such intention."

Though for the most part parsimonious, he spent immense sums in advancing the fortunes of his nephew—or son—the Cardinal-Legate Poyet, who was endeavoring to found a principality in the north of Italy. He lavished money in making Avignon a permanent residence for the papacy, though it was reserved for Benedict XII to purchase and enlarge the enormous palace-fortress of the popes. Yet, after his death, when an inventory of his effects came to be made, there was found in his treasury eighteen millions of gold florins and jewels and vestments estimated at seven millions more. Even in mercantile Florence, the sum was so incomprehensible that Villani, whose brother was one of the appraisers, feels obliged to explain that each million is a thousand thousands.

When we reflect upon the comparative poverty of the period and the scarcity of the precious metals, we can estimate how great an amount of suffering was represented by such an accumulation, wrung as it was, in its ultimate source, from the wretched peasantry, who gleaned at best an insufficient subsistence from imperfect agriculture. We can, perhaps, moreover, imagine how, in its passage to the papal treasury, it represented so much of simony, so much of justice sold or denied to the wretched

which he proclaimed death to those who studied the science; and increased the powers of the inquisition for this purpose. Is it any wonder that we ask for a little fair play in these matters of history?

litigants in the curia; so much of purgatory remitted, and of pardon of sins to the innumerable applicants for a share of the Church's treasury of salvation.

The permanent evil which he wrought by this shameless traffic in benefices, and the reputation which he left behind him, are visible in the bitter complaints which were made at the Council of Siena a century later by the deputies of the Gallican nation. They refer to his pontificate as that in which the Holy See reserved all benefices to itself; when graces, expectatives, etc., were publicly sold to the highest bidder, without regard to qualification, so that in France many benefices were utterly ruined, by reason of the insupportable burdens laid upon them. It is no wonder, therefore, that when St. Birgitta of Sweden was applied to in the latter part of the fourteenth century, by some Franciscans, to learn whether John's decretals on the subject of the poverty of Christ were correct and she was vouchsafed two visions of the Virgin to satisfy their scruples, the Virgin reported that his decretals were free from error, but discreetly announced that she was not at liberty to say whether his soul was in heaven or in hell.

Such was the man to whom the cruel irony of fate committed the settlement of the delicate scruples which vexed the souls of the Spirituals.

Thus it will be seen that instead of being the sainted "fatherly head of Christendom," the tender shepherd whose soul is "wrung with anguish at the thought of a lost sheep," Pope John was, in reality, a cruel despot and an ambitious, unscrupulous, colossal Fourteenth Century "grafter."

We are told by the Dean of Fordham University that Pope John was an example of liberality, virtue and broad culture. He is painted by Dr. Walsh as being a much maligned and slandered saint, who sacrificed his private means that heathen souls might be saved. This philanthropist and Christian scholar, Dr. Walsh informs us, was so filled with the spirit of humanitarianism, that he "founded the library of the popes at Avignon, endowed it especially, and kept five copyists constantly at work at his own

expense." His own expense! Think of it! At that very time he was helping to make Rome the beggar, highwayman, and assassin of the world. Every dollar he possessed represented, as Lea has observed, the poverty, squalor and hunger of the wretched peasantry; so much simony; so much of justice sold—or denied; so much of purgatory remitted, and of pardon for sins, to the innumerable applicants, for a share of the Church's treasury of salvation.

Now, allow me, for the purpose of illustration, to refer in passing to the unbiased history of a few specific acts of this holy and self-sacrificing father of Christendom:

(1) This Vicar of Christ burned men alive. He increased and extended the horrors of the Holy Inquisition. One of his first official acts was the degradation and perpetual imprisonment—because of some ancient private grudge—of Hugues Gerold, Bishop of Cahors.

After he had solemnly degraded and imprisoned his victim, he delivered him over to the secular arm, and in July, 1317, Hugues was partially flayed alive and then dragged to the stake and burned to death.

No greater exhibition of savagery than this is found recorded in the whole barbaric and bloody history of even papal government.

(2) Before his pontificate was a year old, he had created a new heresy: "that which held it unlawful for Franciscans to wear flowing gowns, or to have granaries or cellars." This persecution was directed against the "Spirituals," a body of pious Christians, some of whom Pope John condemned and burned without even a hearing. His treatment of Bernard Deliceux, one of the foremost of these, serves so well the purpose of giving a glimpse[†] of John's true character, that I will venture to quote fully the account of it, as given by Lea, Vol. II, page 99. The Franciscan order had been divided into two well defined parties which came to be known as the "Spirituals" and the "Conventuals."

"One of the first cares of John XXII was to heal this schism, and he promptly summoned before him the friars of Beziers and Narbonne. Bernard had not hesitated in signing an appeal to the Pope, and he now boldly came before him at the head of his brethren. When he undertook to argue their cause, he was accused of having impeded the Inquisition and was promptly arrested. Besides the charge of impeding the Inquisition, others of encompassing, by magic arts, the death of Benedict XI, and of treason in the affair of Carcassonne, were brought against him.

A papal commission was formed to investigate these matters, and for more than two years he was held in close prison while the examination went slowly on. At length it was ready for trial, and September 3, 1319, a court was convened at Castelnau-dardi.

"The official report of the trial has been preserved in all its immense prolixity, and there are few documents of that age more instructive as to what was then regarded as justice. Some of Bernard's old accomplices, such as Arnaud Garsia, Guillem Fransa, Pierre Probi, and others, who had already been seized by the Inquisition, were brought forward to be tried with him and were used as witnesses to save their own lives by swearing his away. The old man, worn with two years of imprisonment and constant examination, was subjected for two months to the sharpest cross-questioning on occurrences dating from twelve to eighteen years previous, the subjects of the multiform charges being ingeniously intermingled in the most confusing manner. Under pretext of seeking the salvation of his soul, he was solemnly and repeatedly admonished that he was legally a heretic for remaining for more than a year under the *ipso facto* excommunication incurred by impeding the Inquisition, and that nothing could save him from the stake but absolute submission and full confession. Twice he was tortured; the first time, October 3d, on the charge of treason; and the second, November 20th, on that of necromancy; and, though the torture was ordered to be moderate, the notaries who assisted it are careful to report that the shrieks of the victim attested its sufficiency. In neither case was anything extracted from him; but the efficiency of the combined pressure thus brought to bear on a man weakened by age and suffering is shown by the manner in which he was brought day by day to contradict and criminate himself, until at last he threw himself upon the mercy of the court and humbly begged for absolution.

"In the sentence rendered December 8th, he was acquitted of attempting the life of Benedict XI, while on the other charges his guilt was aggravated by no less than seventy perjuries committed under examination. After abjuration, he was duly absolved and condemned to degradation from holy orders and imprisonment for life, in chains and on bread and water, in the inquisitorial prison of Carcassonne. Considering the amnesty proclaimed in 1307 by Phillippe le Bel, and on the discharge of Frere Bernard in 1308, it seems strange that now the representatives of Phillippe le Long at once protested against the sentence as too mild, and appealed to the pope. The judges themselves did not think so, for in delivering the prisoner to Jean de Beaune, they humanely ordered that in view of his age and debility, and especially the weakness of his hands (doubtless crippled in the torture chamber), the penance of chains and bread and water should be omitted. Jean de Beaune may be pardoned if he felt a fierce exultation when the ancient enemy of his office was thus placed in his hands to expiate the offence which had so harassed his predecessors, and that exultation was perhaps increased when, February 26, 1320, the relentless pope, possibly to gratify the king, countermanded the pitying order of the bishops, and required the sentence to be executed in all its terrible rigor. Under these hardships the frail body which had been animated by so dauntless a spirit soon gave way, and in a few months merciful death released the only man who had dared to carry on a systematic warfare with the Inquisition."

(3) John's persecution of the Jews, and his order in 1320, that all copies of the Talmud must be seized and burned, will serve to illustrate his tyrannical intolerance of other religions.

(4) Some of Pope John's method of observing his vows of celibacy and chastity may be obtained from the following quota-

tion from Draper's "Intellectual Development of Europe," Vol. II, page 95:

"Petrarch, who lived at Avignon at this time (during the reign of Clement VI, 1342), speaks of it (the papal court) as a vast brothel. His own sister had been seduced by the Holy Father, John XXII."

Now, this is the author of the bull *Super illius specula*; the pontiff who is held up to the Students of Fordham University by their Dean and Professor of Medical History as a paragon of virtue; as a "true father of Christendom." Elected to the chair of St. Peter as the result of force, treachery and intrigue, reigning for eighteen years with the cruelty of a tyrant, leaving a record of acts of injustice which rival in savagery those of a wild beast, a burner of innocent men and a seducer of women, he died firm in the faith that poverty is essential to salvation—possessing eighteen millions of gold florins in specie, and seven millions in plate and jewels!

On behalf of the student at Fordham University, I plead, in the language of their dean, for "a little fair play in these matters of history!"

We now come to the consideration of two specific points, raised in this discussion:

(I) Was Pope John XXII superstitious?

(II) Does the bull *Super illius specula* contain evidence of superstition?

Dr. White has said that Pope John "was sunk in superstition the most abject and debasing," and that the bull in question proves this. Dr. Walsh denies these statements and characterizes Dr. White's foundation for them as "history myth." Further, Dr. Walsh says of the bull: "Now here is a papal document that far from containing any of the superstitions that President White so outspokenly declares it to contain is a worthy expression of the fatherly feelings of the head of Christendom that might have been made at any, even the most enlightened period of the world's history." Let us then examine these points:

Was John superstitious?

Could any man who sincerely believed in the doctrines of the Christian Church of the Middle Ages have been other than superstitious? Could any man have occupied the papal throne from 1316 to 1334 and have been free from "superstition the most abject and debasing"—unless, of course, he were a consummate

hypocrite? The case is simple: Pope John XXII either believed or did not believe in demons. If he so believed, was he not superstitious? if he did not so believe, how could he have given credence and recognition to sorcery? If, in the year 1317, he imprisoned, tortured and burned to death Jean D'Amant and sundry clerks of the sacred palace on the charge of attempting his life with figurines, invoking the aid of demons, did he not believe in sorcery? If he did these things, not believing in sorcery, was he not a monstrous hypocrite and a wanton savage? As to Dr. Walsh—he is welcome to either horn of the dilemma which he has elected to create.

It would be of interest to the unprejudiced reader to review, in passing, the general subject of Christian superstition and some of its practices common during the Middle Ages, especially in the days of Pope John XXII, as bearing on our discussion, and to recall some of the consequent effects upon European civilization.

Limitations of space do not permit, however; it may be sufficient to state that historians promulgated it as truth, and scientists, mathematicians, astronomers, lawyers, doctors and chemists were enslaved by it; while the inspired Church, represented by the "Vicars of God on earth," insisted, under penalty of excommunication, interdict, persecution, torture and the stake, that belief in this superstition was necessary to the saving of the immortal soul.

At that period of the world's history when John XXII occupied the papal chair, as yet the real era of witchcraft in Christendom had not arrived, but it was being developed, through the universal belief in sorcery and the sorcerer. While the darkness of superstition's night was made hideous by the existence of myriads of evil spirits, imps of Satan, who were ever on the alert to destroy man and take possession of his soul, a belief in good spirits was equally prevalent. These good spirits sustained the same relation to God that the evil ones did to the Devil; they protected the faithful from the snares of the evil spirits; they watched over those who carried amulets and charms, repeated prayers, counted beads, fasted and prayed and performed ceremonies.

It was this belief in the power of spirits, both good and bad, which developed the sorcerer and the magician. The priest performed feats of magic through the power bestowed on him by Christ and the sorcerer rivaled him with power given him by

the Devil. When magic was used in the name of God, Christ, or the saints, the act or thought was not heretical; when diabolic, it was blasphemous. The power of the sorcerer was unlimited.

Now since the Church insisted on the truth of the belief in the power of the sorcerer, is it after all so very remarkable that the head of Christendom should believe in sorcery and magic? In a continuous war waged by such mighty antagonists, Christ and the Devil, is it at all wonderful that, in 1317, and again in 1326, we find the sorcerer the agent of Satan, attempting the life of the "Vicar of Christ on earth"? And is it not natural that Pope John XXII, as Vicegerent of God, should dread the machinations of his greatest enemy?

Born about the middle of the thirteenth century, James of Cahors, Cardinal D'Eusa, Bishop of Porto, afterward Pope John XXII, breathed the malaria of theologic superstition for nearly a century. To hold that he escaped infection is equal to saying that he did not breathe at all. Nobody living in those days did, or could, possibly escape it. Even the greatest scientific minds, Albert the Great, Thomas Aquinas, Arnold of Villanova, Raymond Lully and the great chemist, Roger Bacon, accepted and taught many of the superstitions of their day.

For Pope John XXII to have denied the existence and power of demons, was for him to deny the truth of the Scriptures. The Old Testament is filled with allusions to the Devil, to evil spirits; and this is also true of the New Testament. To have denied the sorcery and magic of diabolic possession; to have even hinted that devils did not cause disease; that they did not in a thousand ways tempt and mislead their victims, was to contradict the words of Jesus. Did not Christ Himself frequently cast evil spirits out of the bodies of men and women? Did He not order them to take possession of the bodies of certain swine? Was He not Himself sorely tempted by Satan and carried by him to the top of the temple? Did not the Devil offer Christ the kingdoms of the earth in return for adoration? "If thou, therefore, worship me, all shall be thine." (Luke IV:7.) To have swerved one jot from these doctrines would have necessitated the giving up of the Bible. To have denied the existence and power of evil spirits would have utterly destroyed the foundation of Christianity. The action of the Devil in the Garden of Eden made the coming of Christ a necessity; laid the foundation of the atonement; crucified the Saviour and gave us the Trinity. Without Satan and his

evil spirits, John's creed would have crumbled to dust and the superstructure known as Christianity would have become a shapeless ruin. John was as thoroughly wedded to these superstitions as was the most ignorant of his subjects, and a great deal more so; for he was a theologian, and, therefore, familiar with the theurgy and thaumaturgy of the ancient world. From Egypt, India, Greece and Ancient Rome, and, especially, from Hebraic belief, came the ideas "so fruitful in the development of sorcery, of compacts with Satan by which sorcerers became their slaves, binding themselves to do all the evil they could encompass, and to win over as many converts as they could, to follow their example. "Thus the sorcerer or witch was an enemy to all the human race, as well as to God; the most efficient agent of hell in its spiritual conflict with heaven. His destruction by any method was therefore the plainest duty of man. This was the perfected theory of sorcery and witchcraft by which the Gentile superstitions inherited and adopted from all sides were fitted into the Christian dispensation and made part of its accepted creed." This was the belief of John XXII.

Before taking up the consideration of the bull *Super illius specula* I desire, with the permission of the reader, to call his special attention to Dr. Walsh's comment on that part of the bull in which Pope John, while decreeing that "a process shall be begun before competent judges for the infliction of all and every penalty which heretics are subject to according to law," he, at the same time, exempts the property of the sorcerer for confiscation, in the following phrase: "*except confiscation of goods.*" Dr. Walsh in his Answer has seen fit to make this exemption clause (which I have here italicised), the occasion of a foot-note, as follows:

"This exception is worth noting, especially since it is evidently Pope John's attempt to prevent abuses that arise from the cupidity of judges."

Now, while it is apparent that this is simply a passing attempt at glossary work, it serves as another illustration of Dr. Walsh's peculiar method of teaching history; and since he again comes forward as an interpreter—this time not of the language—but, of the motive of Pope John—will it not be a bit interesting to see how his efforts at mind-reading are substantiated by the facts?

In order to get an idea of the real motive which prompted Pope John, in this bull, to deprive the secular arm of the legal

function which, by virtue of State and Papal authority, it had exercised for at least one hundred and fifty years, we must first become somewhat acquainted with the law of confiscation then in operation throughout Christendom, and the conditions which arose out of its execution, through greed of Church and State, in sharing the confiscated property. On this subject we are informed by no less an authority than Lea (Vol. I, page 502) that,

"Although, for the most part, as we shall see, confiscation was technically not the work of the Inquisition, the distinction was rather nominal than real. Even in times and places in which the Inquisitor did not pronounce the sentence of confiscation, it was the accompaniment of the sentence which he did pronounce. It was, therefore, one of the most serious of the penalties at his disposal, and the largeness of the results effected by it give it an importance worthy a somewhat minute examination.

"For the source of this, as of so much else, we must look to the Roman law. It is true that, cruel as were the imperial edicts against heresy, they did not go to the length of thus indirectly punishing the innocent. Even when the detested Manichæans were mercilessly condemned to death, their property was confiscated only when the heirs were likewise heretics. If the children were orthodox they succeeded to the estate of the heretic parent, who could not execute a will and disinherit them. It was otherwise with crime. Any conviction involving deportation or the mines carried with it confiscation, though the wife could reclaim her dower and any gifts made to her before the commission of the offence, and so could children emancipated from the *patria potestas*. All else inured to the fisc. In *majestas*, or treason, the offender was liable to condemnation after death, involving the confiscation of his estate, which was held to have lapsed to the fisc at the time when he first conceived the crime. These provisions furnished the armory whence pope and king drew their weapons, which rendered the pursuit of heresy attractive and profitable.

"King Roger, who occupied the throne of the Two Sicilies during the first half of the twelfth century, seems to have been the first to apply the Roman practice by decreeing confiscation for all who apostatized from the Catholic faith—whether to the Greek Church, to Islam, or to Judaism does not appear. Yet the Church cannot escape the responsibility of naturalizing this penalty in European law as a punishment for spiritual transgression.

The great Council of Tours, held by Alexander III, in 1163, commanded all secular princes to imprison heretics and confiscate their property. Lucius III, in his Verona decretal of 1184, sought to obtain for the Church the benefit of the confiscation which he again declared to be incurred by heresy. One of the earliest acts of Innocent III, in his double capacity of temporal prince and head of Christianity, was to address a decretal to his subjects of Virterbo, in which he says:

“‘In the lands subject to our temporal jurisdiction we order the property of heretics to be confiscated; in other lands we command this to be done by the temporal princes and powers, who, if they show themselves negligent therein, shall be compelled to do it by ecclesiastical censures. Nor shall the property of heretics who withdraw from heresy revert to them unless some one pleases to take pity on them. For as, according to the legal sanctions, in addition to capital punishment, the property of those guilty of *majestas* is confiscated, and life simply is allowed to their children through mercy alone, so much the more should those who wander from the faith and offend the Son of God be cut off from Christ and be despoiled of their temporal goods, since it is a far greater crime to assail spiritual than temporal majesty.’

“This decretal, which was adopted into the canon law, is important as embodying the whole theory of the subject. In imitation of the Roman law of *majestas*, the property of the heretic was forfeited from the moment he became a heretic or committed an act of heresy. If he recanted, it might be restored to him purely in mercy. When the ecclesiastical tribunals declared him to be, or to have been, a heretic, confiscation operated itself; the act of seizing the property was a matter for the secular power to whom it inured, and the mercy which might spare it could only be shown by that power. All this it is requisite to keep in mind if we would correctly appreciate some points which have frequently been misunderstood.

“Innocent’s decretal further illustrates the fact that at the commencement of the struggle with heresy the chief difficulty encountered by the Church in relation to confiscation was to persuade or coerce the temporal rulers to do what it held to be their duty in taking possession of heretical property.”

Thus it will be seen from the foregoing that, on this question of confiscation, it was the cupidity of the Church, and not the “cupidity of judges,” that the condemned heretic most dreaded.

The Church had ingeniously appropriated the old Roman law against treason and, on the ostensible ground, that it is a far greater crime to "assail spiritual than temporal—majesty," applied it for the real purpose of robbing and plundering the home of the erring Christian, whose soul she was seeking to save; and whenever, through neighborly sympathy, the local branch of the secular arm protested against such bare-faced robbery, or was mercifully lax in executing the Papal or Inquisitorial mandate, it was, at the point of a sword, coerced into doing the Church's bidding; and was finally bribed to acts of cruel injustice, through the promise of a part of the resulting loot. Thus did the spiritual, gradually, through a series of years, seduce and debauch the temporal power, throughout all Christendom, until we find, in the blessed year of our Lord, 1326, Pope John XXII—"by the favoring clemency of Him who made the first man in His own image"—high on the "watch-tower" of a gigantic spiritual trust, "freezing out" the agents of all temporal power, by inserting in the bull *Super illius specula* an icy barrier in the form of an injunction clause, limiting the jurisdiction of secular authority to the *person* of the accused, and reserving to himself, as the spiritual head of this trust, the *disposition of the spoils*.

Now, in the light of the evidence, what does Dr. Walsh mean by his assertion that "it is evidently Pope John's attempt to prevent abuses"? Does he mean to attribute to the assailant and robber a beneficent and altruistic motive? Is it possible that this Professor of History would lead his reader to believe that Pope John, having issued a peremptory order that "a process shall be begun before competent judges"—not for the trial of the alleged sorcerer—but "for the *infliction* of all and every penalty which heretics are subject to according to law," namely, "imprisonment, torture, the stake, and confiscation of goods," introduced the clause, "except the confiscation of goods," for the purpose of protecting against the "cupidity of judges," the property of those whom he had already condemned? Would Dr. Walsh teach us that this avaricious pope acted in the interest of the accused sorcerer, when, against the authority of the law, he inserted in his bull the words: "except the confiscation of goods"? Can we have misapprehended the idea, on this subject, that Dr. Walsh hoped to convey to the mind of his reader? Let us again quote his exact words: "This exception is worth noting, especially since it is evidently Pope John's attempt to prevent abuses that might arise

from the cupidity of judges." Does not Dr. Walsh, here, distinctly imply that Pope John, as the Holy Father, is protecting the interests of his children against the rapacity of judges? If he does, is not the implication one of the most amusing and conspicuously transparent of all his Jesuitical efforts? So far from the truth is Dr. Walsh's assertion and implication concerning John's motive, that all unprejudiced history points to the fact that John's bull temporarily exempted the property of the sorcerer—not at all in the interest of the accused, but because he did not want the secular arm to get it away from the Church and from himself. Is it possible that Dr. Walsh does not know that, under the thieving conditions which then obtained, Pope John could have introduced the words "except confiscation of goods" for only one purpose: to prevent the secular arm from seizing the property of the heretic, before the agent of the Church could himself rob the owner of it? Does not Dr. Walsh know that the whole procedure of "confiscation" was one grand system of robbery and spoliation which the Church through her tremendous power had inaugurated? Does he not know that in the days of Pope John XXII, under an agreement which had previously been made between the State, the Inquisition and the Papal Camera, a system of rapine, pillage and plunder was in operation all over Europe, by which these combined powers legally robbed the heretic and his heirs; that under this agreement, each person of this thieving trinity was to have one-third of the spoils; that, even under this holy and inspired compact, there was constant wrangling and squabbling as to who should get the lion's share? Does not Dr. Walsh know that these three vultures, the Inquisition, the Papal Camera and the State, finally became so voracious that neither would trust the other to divide the prey, and that this, and similar corruption among them, caused Pope John, in his bull, to warn the secular arm, that in carrying out the sentence of the Church against the unfortunate heretic, it must not confiscate his goods? If he does not know these things, and is really desirous of becoming familiar with them, may I be permitted to suggest to him the perusal of Chapter XIII of Lea's "History of the Inquisition of the Middle Ages," entitled "Confiscation"?

Let us now, for a few moments, consider the bull *Super illius specula*:

It is again cheerfully admitted that the bull does not refer to the killing of men and women by a magic word, nor does it say

that sorcerers had tried to kill Pope John "by piercing a waxen image of him with needles in the name of the devil." But it is not true that the bull "is far from containing any of the superstitions which Dr. White so outspokenly declares it to contain." To hold or to imply that it contains no evidence of superstition, and to say that "it is a worthy expression of the fatherly feelings of the head of Christendom that might well have been made at any, even the most enlightened period of the world's history"; that "anyone who reads it will need no defense of the character of Pope John XXII," is absurd. The very best evidence of Pope John's superstition is the bull in question. If history taught us nothing of that pontiff except what we learn from it, we would have in our possession abundant evidence of his superstitious character. The language is so direct that it is easily understood and clearly shows the bull to be one of the many recorded exhibits of superstition and tyranny which characterized the papal government of the middle ages, thus demonstrating conclusively that its author was in perfect harmony with his surroundings. It also shows Pope John XXII to have been, by nature, a man of remarkable mental vigor, a learned theologian, that is to say, a thirteenth century scholar, thoroughly saturated with the superstitions of his creed. But if the bull be viewed from the standpoint of the "most enlightened period of the world's history," does not its irrationality at once become apparent? Imagine, if you please, a twentieth century pope issuing an edict, warning the Catholics of this country or France, against the action of demons, the power of sorcery and magic, and threatening them with the curse of excommunication and "other and greater penalties," if they do not, "within the space of eight days from the knowledge of the edict, destroy and burn absolutely and completely, every book and part thereof which treats of such subjects." Imagine such a bull coming from the pen of Leo XIII, or, for that matter, from the pen of any modern ruler. Would not every intelligent reader of such a document at once conclude that its author was a fit and proper subject for care in a lunatic asylum? Unquestionably, to act upon the suggestion of Dr. Walsh, by taking the bull out of its historical environment and submitting it to criticism based upon our present knowledge and civilization, would necessitate the verdict that Pope John was, when he wrote it, suffering from mental alienation, probably some form of mania. All things considered, it would seem that Dr. Walsh's

assertion, that the bull might have been issued "in any, even the most enlightened period of the world's history," savors slightly of insincerity of purpose. It seems to be one of the many examples, already noted, of that gentleman's zeal in *endeavoring* to conceal historical truth, and is, therefore, hardly worthy of serious consideration. However, it is interesting to find that in spite of the plea of insanity which has been interposed by Dr. Walsh in defense of its author, the bull *Super illius specula* represents to a nicety the superstition of the day in which it was written. Let us see if an impartial analysis of it does not confirm this assertion: Taking up Dr. Walsh's translation of the bull, as set forth in his Answer, it is seen to be divided into a preamble and three sections. The preamble contains the language which is especially relevant to this discussion, while the body of the edict is devoted to warnings, threatened anathemas, excommunications, and to "other and greater penalties." Passing over, as being immaterial to our purpose, that portion of the preamble which sets forth with admirable brevity the essential doctrines of the Christian faith, we come to the part which bears specifically upon the question of John's superstition, as follows: "With grief we discover that there are many who are Christians only in name; many who turn away from the light which once was theirs, and allow their minds to be so clouded with the darkness of error as to enter into a league with death and a compact with hell. The very thought of it wrings our soul with anguish": Now, did John believe, or did he not believe, that the persons to whom he refers as being "Christians only in name" and who had turned "away from the light which was once theirs" and had allowed "their minds to be clouded with error" had actually entered into a "league with death and a compact with hell"? Did he, or did he not, believe that persons deflecting from the tenets of the Roman Church had, because of that fact, entered into "a league with death and a compact with hell"? If he did so believe, was he not intolerantly superstitious; if he did not so believe, and pretended to do so, was he not a hypocrite? Again: Was it to the sorcerer and to the magician that he referred as having "entered into a league with death and compact with hell"; and if he did so refer to them and actually believed that by invoking the power of demons they could and actually had done so, was he not superstitious? Is this the part of the bull that Dr. Walsh desires to have submitted to the criticism "of any, even

the most enlightened period of the world's history"? Then follows this: "They sacrifice to demons and adore them, they make or cause to be made, images, rings, mirrors, phials, or some such thing, in which, by the art of magic, evil spirits are to be enclosed. From them they seek and receive replies, and ask aid in satisfying their evil desires. For a foul purpose they submit to the foulest slavery. Alas! this deadly malady is increasing more than usual in the world and inflicting greater and greater ravages on the flock of Christ." What did John mean by saying, "they sacrifice to demons and adore them"? Did not this learned lawyer and theologian, this scholar, who in this very bull demonstrates his marvelous ability to express his thought, by setting forth in five lines the fundamental principles of Judaism and Christianity, as well as an epitome of the supposed events from which they sprang, mean exactly what he said? Is it probable that this holy father of Christendom, realizing the dire penalty of such acts, would have accused his beloved children of sacrificing to demons, if he had not believed in the existence of demons? And, if he believed in the existence and power of demons, was he not superstitious? Does any sane or intelligent person living in "the most enlightened period of the world's history" believe in the existence of demons? Again: What did John mean when he wrote these words: "they make, or cause to be made images, rings, mirrors, phials, or some such thing, in which, by the art of magic, evil spirits are to be enclosed"? Did he not mean exactly what he said? Is it possible that the "Vicar of Christ" writing those words did not believe that the persons to whom he referred could and did, by the art of magic, enclose evil spirits in images, rings, mirrors and phials? But Dr. Walsh tells us that in so expressing himself the pope was simply making use of an hypothesis. He says, in referring to the language used, "He" (meaning John) "does not say that sorcerers can shut up devils in mirrors, finger rings and phials, but uses the hypothetical expression that in these things evil spirits are to be enclosed." Does not Dr. Walsh see that the very next sentence destroys, with an unqualified statement of fact, his "hypothetical expression"? In that sentence the pope says, "From them" (meaning the demons) "they seek and *receive* replies and ask aid in satisfying their evil desires." Nothing could be plainer. The sentence which follows is equally clear and emphatic: "For a foul purpose they submit to the foulest slavery." What did John mean by the use of the words,

“for a foul purpose”? Did he not mean for the purpose of practicing the arts of sorcery and magic? and do not the words “they submit to the foulest slavery” refer to John’s belief that the “sons of men” instead of “serving God” were enslaved by demons? “Alas!” says John, “this deadly malady is increasing more than usual in the world and inflicting greater and greater ravages on the flock of Christ.” To what deadly malady did he refer? Was it not the infection of sorcery and magic through diabolic power? And yet, Dr. Walsh, in discussing the merits of this bull, tells us that it is a “papal document that, far from containing any of the superstitions that President White so outspokenly declares it to contain, is a worthy expression of the fatherly feelings of the head of Christendom, that might well have been made in any, even the most enlightened period of the world’s history.” If Pope John were not superstitious, if he were not thoroughly convinced of the reality of sorcery and magic, through the power of Satan, if he did not believe that his children were in the toils of the devil and his imps, why did he issue the bull *Super illius specula* at all? It will not do for Dr. Walsh to explain the pope’s action in this matter by saying that the bull, or parts of it, “are simple expressions of the Pope’s solicitude for his flock on hearing of some of the practices that they had given themselves up to.” If, in his opinion, there were no demons; if down deep in his heart he did not feel that they existed, what was the necessity for the “Pope’s solicitude for his flock” to which Dr. Walsh refers? If there were no demons to enslave the sheep, how then could the flock be in danger? What was it “the very thought of which wrung John’s soul with anguish”? In this, Pope John does not entirely agree with Dr. Walsh. The pope says that his solicitude for his flock is owing to the fact that he has discovered from the height of his “watch-tower” that many of his sheep are entering “into league with death and compact with hell.” Dr. Walsh seems to have, on this point, a better understanding of what the pope meant than did the pope himself. One would suppose from his interpretation of the bull that Pope John had never heard of diabolic possession—that the Holy Father, in some way, through the merest chance, perhaps, had read that his children believed in sorcery and magic and invoked the aid of demons, and that he was so surprised and shocked by the news that he immediately sat down and wrote the bull *Super illius specula* for the purpose of expressing his solici-

tude for them and to warn them of great danger. Well, the tender Shepherd, whose soul was wrung with anguish at the thought of his poor straying and lost sheep, did send a warning to them and we find it in the next sentence of the bull as follows: "Since, therefore, we are bound by the duty of our pastoral office to bring back to the fold of Christ the sheep who are wandering through devious ways, and to exclude from the Lord's flock those who are diseased, lest they should infect the rest, we, by this edict, which, in accordance with the counsel of our brother bishops, is to remain in perpetual vigor, warn all"—against what? what does the Vicar of Christ on earth say next? does he write the words which, coming from him, would have at once checked the most enslaving and death-dealing superstition the world has ever known? did he write the words that would have prevented the torture and murder of thousands of his fellow-men? did he say to them "there are no demons"? did he tell them that belief in all such things is superstition which has been handed down through all the ages; belief born of ignorance and fear, "when nature rocked the cradle of the infant world"? No; there is no word of explanation to be found in the bull; no word of instruction; nothing calculated to enlighten his poor deluded children on the subject; nothing to dispel the awful shadow of the stake; nothing from the holy father but threats, penalties and curses. Thus he warns:

"We warn all and in virtue of holy obedience and under pain of anathema enjoin on all those who have been regenerated in the waters of baptism not to inculcate or study any of the perverse teaching we have mentioned or what is more to be condemned, practice them in any manner upon any one."

"Section II. And because it is just that those who by their deeds make mock of the most High should meet with punishment worthy of their transgressions we pronounce the sentence of excommunication which it is our will they shall *ipso facto* incur, who shall presume to act contrary to our salutary warnings and commands. And we firmly decree that in addition to the above penalties a process shall be begun before competent judges for the infliction of all and every penalty which heretics are subject to according to law, except confiscation of goods, against such as being duly admonished of the foregoing or any of the foregoing practices, have not within eight days from the time when the

admonition was given amended their lives in the aforesaid matters."

"Section III. Moreover, since it is proper that no opportunity or occasion should be given for such flagitious practices, we, in conformity with the advice of our brother bishops, ordain and command that no one shall presume to have or hold books or writings containing anything of the before mentioned errors or to make a study of them. On the contrary we desire, and in virtue of holy obedience we impose the precept upon all that whosoever shall have any of the aforesaid writings or books, shall within the space of eight days from their knowledge of our edict in this matter destroy and burn them and every part thereof absolutely and completely; otherwise, we decree that they incur the sentence of excommunication *ipso facto* and, when the evidence is clear, that other and greater penalties shall be inflicted upon culprits of this kind."

Now, if Pope John was free from superstition, why was it that in framing the bull *Super illius specula* he did not warn the members of his beloved flock that belief in sorcery and magic had no foundation in fact? Why did he not tell them that demons do not exist and that, therefore, the power of sorcery and magic ascribed to them is purely imaginary? Why did he allow them to submit to this "foul slavery," without the slightest effort on his part to teach them, through this bull, the truth concerning these things? Why did he, instead, condemn them as heretics and decree that they should incur the sentence of excommunication *ipso facto* and, when the evidence is clear, that other and greater penalties shall be inflicted upon "culprits of this kind," thus deepening throughout all Christendom the sombre shadow of the *auto da fé*? Is not this problem easy of solution? does it not lie in the fact that this infallible guide, whom Dr. Walsh tells us was "one of the greatest popes of the century in which he lived," was as the famous historian, Andrew D. White, has observed, "sunk in superstition the most abject and debasing"?

(To be concluded.)

PHYSICIANS AS CONTRIBUTORS TO BRITISH AND AMERICAN LITERATURE.

(Concluded.)

BY MRS. JOHN E. SHEPPARD,

of Brooklyn, N. Y.

American Literature.

Pioneer hardships are not apt to produce song and story. Add to this condition stern Puritanism and you will understand the scarcity of literature in this country during the first century of her colonial history. Writers there were, but their theme was religion—the thunders of the law, and justice, not always tempered by mercy, were expounded from the pulpit and by the quill of the New Englander; trading, and a desire to live and let live, occupied the Dutch of New Amsterdam in the early days of their history; while Virginia and the rest of the South were busy establishing plantations, and fostering (as best they could) family traditions of good society and breeding. It behooved the physician of this time to hold himself in readiness at all hours of the night and day to attend to the quieting of historical conditions and other maladies of the people. During the first one hundred years of this country, none suffered more hardship than he who oftentimes risked his own life in an effort to save others. What wonder is it then, in the face of all this, search where we may, we find in the literature of that time not a line that can be ascribed to the pen of a physician?

The latter part of the eighteenth century, with its war-cry and struggle for liberty, was a time when the writers of history became rich in good material for their work. Even then, the influence of Theology was felt as in Channing's "Student's History," each chapter having a scriptural reference as a heading.

After the historians followed a period of oratory which was unprecedented in this country, and the equal of which has not since been known. Then, and not until then, was America in condition for the development of general literature. Hand in hand with oratory, came the renaissance of New England, which developed writers in all the walks of life wherein a knowledge of letters might be found.

The first to reward our research for an American novelist or poet among medical men is *Lemuel Hopkins* (1750-1801), of Hartford, Conn., one of the so-called "Hartford wits" of the latter

part of the eighteenth century. This old-time physician was a satirist with a ready pen for those who differed from him on religion or politics. He was the associate of Trumbull, Humphries and Barlow. His contributions to the press were eagerly sought for by the editors of his time. Ethan Allen got into disfavor on account of his infidelity in the day of this writer, who characterized the General in rather harsh terms in a lengthy poem, beginning with these lines :

“Behold him now, ye staunch divines,
His tall head bustling above the pines.
All front he seems like wall of brass,
And brays tremendous as an ass.
One hand is clenched to batter noses,
While t’other scrawls ’gainst Paul and Moses.”

A sad ending to a brilliant career was the death of *Dr. Joseph Brown Ladd*; in an affair of honor he received his death wound, and the world of letters lost a born poet, who at the age of ten years wrote a poem far superior to those of his contemporaries of twice his years. His poem was followed from time to time by verse of great merit, but the young physician and poet met his unnecessary death at the early age of twenty-six.

Dr. Samuel Latham Mitchell (1764-1831), born in North Hempstead, L. I., was the promoter and founder of the first Agricultural Society in America. His books are on the sciences allied to medicine and a number of short poems were written by him. He became noted for an oration delivered in a Presbyterian Church in Wall Street, to the Tammany Society.

Dr. Benjamin Church (173?-1776?) is said to have given contributions to literature in the early days under the pen name of “A Son of Liberty.”

Dr. James McClurg (1746-1823), of Virginia, was a great writer of scientific books other than medical, and produced a number of love songs having for their theme the beauty of the Virginia maidens, one of whom became Mistress McClurg.

The well-remembered *Dr. David Ramsay* (1749-1815) was the son of Irish emigrants living in Pennsylvania, where David was born. This great man wielded the sword as well as the lancet, and after the war was over took up his pen as well as his practice of medicine; a book of revolutionary data, although true in historical detail, was not allowed to be sold in England. Upon this incident Dr. Ramsay wrote a spirited poem in which he says :

"Their chastisement is only begun.

Thirteen are the States and the story is of one.

When the twelve yet remaining their stories have told,

The King will run mad and the book will be sold."

Four hours' sleep was all this man allowed himself; twenty hours daily for many years were devoted to medicine and literature. He was a man of prepossessing appearance and of a kindly disposition toward all men except the rulers of England.

Dr. Frederic Bland (uncle of John Randolph) was born in 1742, in Virginia, was educated at Edinburgh, began the practice of medicine in 1764, and composed songs which were sung to martial tread during the struggle for liberty. In later life he produced a number of poems.

Dr. Benjamin Rush (1745-1813), a close friend of Franklin, wrote much that was educational and scientific, and also a history of the early settlers of this country. To this may be added several stirring poems, having freedom for their theme.

Dr. Charles Caldwell (1772-1853), of Philadelphia, contributed much to journalism in the early days of American independence. His *Port Folio*, a small magazine, was devoted to the criticism, in a kindly way, of the newspaper editorials of his time. He also wrote the lives of American military and naval officers and other public and distinguished men.

Dr. Martin Johnson, first of East Hampton, L. I., later of the City of New York, wrote some beautiful verse which saved his reputation in after years, when by the flattering offers of a printer he was tempted to translate an infidel book then in vogue, written by Boulanger. In extenuation of this rash act, he said: "Poverty and persuasion induced me to translate this work," which put an end to his literary career, and very nearly robbed him of his practice.

And now, in the year 1792, let us introduce to you *Dr. Elihu H. Smith* (1771-1798), our first Yale graduate, who appears as doctor, physician, poet and playwright, and an all-round good fellow. He wrote several plays which were produced at the old John Street Theatre with success; also a number of sonnets, which were well received; also an operatic version of a ballad, entitled "Edwin and Angelina." In 1793, he edited the first collection ever made of American poetry.

Dr. Josiah Gilbert Holland (1819-1881), of Philadelphia, became a strong influence as an editorial writer in the early his-

tory of journalism in this country. After three years of the practice of medicine he received such flattering offers from a leading newspaper that he gave up his chosen profession and made literature his career for the remainder of his active life. His "Life of Abraham Lincoln" was published when the author was near his 70th year. His novels were well received, and are to-day to be found on the shelves of many private libraries. His last two books, "The Mistress of the Manse" and the "History of the Life of Abraham Lincoln," are fresh in the minds of the people.

In the year 1795 there was born a writer of verse—a bright star destined to shine for a short period in the firmament of current literature. This young physician was *Joseph Rodman Drake* (1795-1820), the associate and bosom friend of Fitz-Greene Halleck and J. Fenimore Cooper. Dr. Drake was a born poet. Read his "Culprit Fay," with its delicacy of light and shade and its descriptive strength. You will see the witching fairies dance along on the waters of his beloved Hudson, whence came the inspiration of this great poem. He and Halleck wrote many contributions to the *New York Post*, during the time it was edited by a Mr. Coleman. Drake signed his poems "Croaker" and Halleck signed his "Croaker, Jr." As these articles contained a roasting for many men in high places, the identity of the authors was kept well-concealed from the public. Dr. William Langstaff, a friend and partner of Dr. Drake, was engaged to copy them, thus keeping the handwriting from even the editor, who saw the circulation of his paper increase ten-fold through printing the verses of these two "Croakers."

About this time, a Connecticut man, *Dr. Percival* (1795-1856), published a number of small volumes of good poetry, which are highly recommended by his biographer, the Rev. J. H. Ward; and *Dr. Robert M. Bird* (1805-1854), of Delaware, began about that time to be felt as a playwright of no mean ability. The "Gladiator," "Spartacus," "Oralloosa," and "The Broker of Bogata," are plays which were well received. Some of us would like to see the "Gladiator" once more, if played as the late John McCullough used to play it. Dr. Bird's best remembered book is "Nick of the Woods," a boy's story.

Dr. Christopher C. Cox (1816-1882) was a contributor to many periodicals. He wrote mostly verses, and one long poem entitled "One Year Ago" brought the author quite into the front

ranks of his compeers. This was prior to the publication of his book entitled "Old New Yorkers," which was the first of its kind, and which probably has been lost sight of in the flood of more recent books on that subject.

Dr. Isaac Hays (1796-1879) accompanied Dr. Kane on his first Grinnell expedition. Upon his return he wrote, in story form, a beautiful account of his experiences, to which he gave the title "An Arctic Boat Journey." Then the Civil War broke out, and this young explorer went to the front and served his country until the victory was won. Taking up his pen again, although still occupied with the practice of medicine, he added four more books to the list of those written by American medical authors.

Dr. Simeon Tucker Clark (1836-1893), a New England physician, wrote a book of poems in which there is much to be admired. These poems were well received by lovers of nature.

Dr. William Henry Winslow is a present day writer, or we should say, a writer of recent years. His "Sea Letter" is a book filled with romance, having for its scenes Martha's Vineyard and the coast of Maine. This book has gained for the author many favorable criticisms by the book reviewers of the present time. The novel is indeed very interesting, being neither melodramatic nor overdrawn, but a good story, well told. We hope more of its kind may follow.

Dr. E. C. Pickett, a University of Pennsylvania man, gave many contributions to literature in the early seventies. His "Life of General Pickett" sets forth President Lincoln's warm friendship for the General and his wife, whose tribute to her soldier husband is a monument of greater worth than Dr. Pickett's book, although his is no mean review, and shows great painstaking.

"A Doctor's Wonder Days," written in 1900, by *G. Frank Lydston*, is a book of much merit, and is beautifully illustrated with the author's original photographs. Dr. Lydston is a contributor to many current magazines.

Dr. William Hammond, one time Surgeon-General of the United States Army, wrote many scientific works which are closely allied to medicine. Aside from these he gave to the reading world six novels. One, entitled "A Strong Minded Woman," was very popular, as was also, "On the Susquehanna." The others were well received but were of minor importance.

Dr. Worthington Hooker, a New England man, produced many good books which might be classed as educational; they are principally along the lines of natural history. Hooker, however, wrote one that is a revival of the earlier style of writers, entitled "The Scriptural Idea of Man."

Dr. Charles G. Halpine came to this country after graduating in medicine in Dublin. He began to practice in New York, but his native taste for battle led him to enlist as a soldier. He went out with the Sixteenth Regulars during the Civil War. After serving his time he returned to New York, and under the pen name of "Miles O'Reilly" he is a well remembered writer to this day.

Dr. Arthur Donalson Smith, of the University of Pennsylvania, contributed much to literature when he published accounts of his expedition between Lake Rudolph and the Nile, in his "Through Unknown Africa." This bright young man had bestowed upon him, as a reward for his discoveries, the Elisha Kent Kane Medal—the first time it was awarded.

Unlike those who contribute from time to time to the current numbers of magazines or journals, is *Dr. S. Weir Mitchell*, of Philadelphia, one of our present day novelists, and a poet. This writer is so well known that it would be wasting time to try to review his works in this essay. To discuss him later will be more interesting, for we are inclined to think of him as the greatest American author in the medical fraternity of the past or present.

While we've tried to bring out the fact that, during the period of renaissance in America, a number of physicians wrote many good novels, plays and poems, we have withheld from the list the name of *Dr. Oliver Wendell Holmes*, physician, anatomist, lecturer, satirist, poet and novelist. All this combined to make of him such a brilliant star in the firmament of literature as to throw the lesser literary lights among his brethren into the gloom of oblivion. Unless the hands of research be allowed to lift the veil to part the curtains of time, and to step into the atmosphere which surrounded the great man, the "Autocrat of the Breakfast Table," who electrified the patriotism of his countrymen when he wrote "Old Ironsides," we will leave him where he deserves to be—in the forefront of his competitors, who were members of the same honored profession.

One there was in those days, however, who deserves a place near the shrine of Dr. Holmes.

Let us penetrate the halo spread about the head that is crowned with New England gems, and we will find one over here in the city of Newark, New Jersey, who wrote almost as many novels as did Dr. Holmes, and whose talent as a dramatist is well remembered. More than twenty of his plays were produced in New York City, and throughout the country. There was not an uninteresting novel in the five written by him. His volume of "American Ballads" is charming, as also is his "Boys' Book of Battle Lyrics," published in 1885. I wonder how many of the present day readers remember this bard as the writer of the song made famous by Du Maurier who, in one of his books, makes Trilby sing "Ben Bolt," and thus revived the memory of its author?

Dr. Thomas Dunn English was the versatile composer who, when asked by the editor of the *New York Mirror*, for a sailor's song, and given but one day in which to write it, wrote and sent this ballad to the office of the *Mirror* in less than the time specified by the editor, and with it the statement that if he had had more time he could have done better. Little did he dream how very well he had written. A story is told about this ballad to this effect: that at the time when it appeared in the *Mirror*, a manager of one of the New York theatres used it to scare a young lad who had been applying again and again to him for an opportunity to demonstrate his ability as a singer. It was fashionable at that time to have songs sung between the acts. "Take this ballad," said he, "have it set to music in time for tonight's performance, and you may sing it." The youth hastened away in hope and fear. He went through his songs for music that might prove to be of some help, and success came to him in one of Kneasel's compositions which, with but few minor changes, admirably fitted "Ben Bolt." The young man captivated his audience, and sang his song in New York for three consecutive seasons.

Among the many doctors of medicine who have contributed to literature, we have named but a few; a sufficient number, however, to prove that, for men of the medical profession, only application is necessary in order that they may write books which will compare favorably with those written by professional authors.

THE BOOKSTALL.

BY DAVINA WATERSON,

of Baltimore, Md.

When sweet temptation came my way,
It was not love or passion's sway

Which tore me,

But just as in the days of yore
The Devil often sheepskin wore,

Now wore he,

And showed a stall where books were piled
Thus craftily my soul beguiled

To spending

The hard-earned pence on curious book
Or pamphlet or aught else which took

My fancy.

No first edition mine could be,
But I could ask the price and see

Its beauty ;

Then give it up with lingering touch
Because I wanted it so much,

But Duty

Said, "Ill-fed man, you cannot pay,
The 'two cent' box be yours to-day

To search in."

I turned its contents o'er and o'er
(A man stood watchful at the door,
Me eyeing).

He went within, then held out eight
Small volumes, though in parlous state,

Worth buying.

"The lot for ten pence," so he said.

I took his offer ; dined off bread

And Byron.

I would not recommend the diet
To any one who needs a quiet

Digestion.

But bid him rather square meals prize,
And shun old bookstalls, were a wise

Suggestion.

TRANSACTIONS OF THE ST. LOUIS MEDICAL
HISTORY CLUB.

ANNUAL MEETING, JANUARY 28, 1909.

The St. Louis Medical History Club met at the Library Building, 3525 Pine Street, on Thursday evening, January 28, 1909. There were present: Drs. Charles D. Stevens, O. A. Wall, Sr., A. E. Taussig, L. C. Boisliniere, F. J. Lutz, W. A. Hardaway, George Homan, and Joseph Grindon. Meeting called to order at 9 P. M. Dr. Stevens elected to the Chair. In absence of the secretary, Dr. Grindon was made secretary *pro tem*.

The minutes of the last meeting, held November 19, 1908, were read and approved.

The report of the Secretary-Treasurer for 1908, showing a balance on hand, January 29, 1909, of \$43.95, was read and, on motion, accepted.

On motion, Dr. Nathaniel Allison was unanimously re-elected secretary-treasurer for the year 1909.

New Business.

Dr. F. J. Lutz stated that a rental should be paid the St. Louis Medical Library Association for the use of their room, with heat, light, janitor service, etc., and moved that Dr. Grindon be appointed a committee to confer with the Library Association on that subject. Motion seconded and carried.

Dr. Grindon, on behalf of Professor Henri Hallopeau, of Paris, presented the club with a handsome bronze medal struck in commemoration of the termination of Professor Hallopeau's almost lifelong service at the Hospital Saint-Louis, which medal Professor Hallopeau desired the Club to accept with the expression of his good wishes and high consideration. The medal bears on the obverse a profile of Professor Hallopeau, with the inscription: "Henri de l'Académie de Médecine." On the reverse is the Professor, seated, examining a female patient who stands before him, with the legend: "Primum multos cognovit cutis morbos," and the date, "MDCCCCVII."

Dr. Hardaway moved that Dr. Grindon be made a com-

mittee to acknowledge the gift and express the thanks of the Club to Professor Hallopeau. Seconded and carried.

Dr. Lutz moved that Professor Henri Hallopeau, of Paris, be elected an honorary member. Seconded and carried.

Five-Minute Talks.

Dr. Lutz exhibited an Elzevir, of 1677, being the "Tractatus de Homine et de Formatione Foetus" of René Descartes, bound with "Cogitationes de Deo Anima et Malo."

Dr. Boisliniere exhibited two volumes from the library of the St. Louis University, the "Ars Magna Scientiae," and the "Mundus Subterraneus" of Father Athanius Kircher, S. J., and read extracts from his life by Dr. J. J. Walsh.

Erratum.

Dr. Homan called attention to the fact that the name of Dr. Max Neuburger, of Vienna, does not appear in the list of honorary members of the club published in THE ÆSCULAPIAN. Reference to the minutes showed that Dr. Max Neuburger was elected an honorary member on June 27, 1907. The secretary was instructed by the chair to supply the omission to the editor of THE ÆSCULAPIAN.

Adjourned.

JOSEPH GRINDON, M.D., *Secretary pro tem.*

STATED MEETING, FEBRUARY 25, 1909.

The St. Louis Medical History Club met at the Library Building, 3525 Pine Street, on Thursday evening, February 25, 1909. There were present: Drs. L. C. Boisliniere, J. H. Duncan, Joseph Grindon, W. A. Hardaway, Gustavus Hinrichs, George Homan, F. J. Lutz, W. B. Outten, C. D. Scott, C. D. Stevens, and Robert J. Terry.

Dr. Warren B. Outten was called to the Chair.

The minutes of the preceding meeting not being at hand, their reading was omitted.

Dr. Grindon, as a committee to confer with the St. Louis Medical Library Association, reported that a rental of \$3.00 per meeting was asked, and he recommended that it be agreed to. Motion to approve report carried.

Dr. Grindon, as a committee for that purpose, reported that he had written Professor Hallopeau, thanking him for

the gift of a medal, and, as secretary *pro tem.*, read Professor Hallopeau's letter gratefully accepting the title of honorary member. Letter ordered filed.

Five-Minute Talks.

Dr. Homan stated that several counties in Illinois were named after physicians. Dr. Hardaway said that the same was true of Missouri, Lynn County among others.

Program.

Dr. Robert J. Terry gave a talk on "The Basle Anatomical Nomenclature (B. N. A.)."

Discussed by Drs. Lutz, Hinrichs, and others.

Dr. W. A. Hardaway read a paper entitled "Brief Notes on a Forgotten Controversy."

Discussed by Dr. Lutz, and others.

Adjourned.

JOSEPH GRINDON, M.D., *Secretary pro tem.*

STATED MEETING, MARCH 25, 1909.

The St. Louis Medical History Club met at the Library Building, 3525 Pine Street, on Thursday evening, March 25, 1909. There were present: Drs. Joseph Grindon, George Homan, J. J. Houwink, Spencer, and Smith.

The meeting was called to order at 9 P. M. with Dr. Spencer in the Chair. Dr. Grindon was chosen secretary *pro tem.* by common consent.

Dr. Homan exhibited a pamphlet on "Typhoid Fever in the Light of Modern Research," written evidently by a St. Louis physician something like twenty years ago, the name of the writer having been torn off.

Dr. Homan also showed some illustrations from the *Illustrated London News* depicting an ancient human skull recently found in the Department of Correze, France, and also a reconstruction of the whole man according to the artist's notion.

Program.

In the absence of Dr. F. J. Taussig, who was to have exhibited the works of Tulpius, Dr. Houwink read an interesting sketch of the life of Tulpius (1593-1674).

Discussed by Drs. Grindon and Spencer.

Dr. Grindon exhibited a rubbing of a brass tablet to the

mother of William Harvey in Folkestone Parish Church, Kent, England, and some pictures of the church, the Harvey Memorial Window, the Harvey statue at Folkestone, etc.

Dr. Ellsworth Smith exhibited a copy of Laennec's "Treatise on Diseases of the Chest" and his "Mediate Auscultation of the Chest?" and gave a brief sketch of Laennec's life. He also showed a copy of Stokes' "On the Heart and Aorta," calling attention to descriptions of Cheyne-Stokes breathing and the Stokes-Adams syndrome.

Adjourned.

JOSEPH GRINDON, M.D., *Secretary pro tem.*

NOTES AND NEWS

The Medical and Chirurgical Faculty of Maryland will dedicate its new Library building, 1211 Cathedral Street, Baltimore, Md., on May 13, 1909. Among the speakers on this occasion will be Drs. S. Weir Mitchell, A. Jacobi, John W. Farlow, Robert F. Fletcher, James Tyson, William H. Welch, and others. Prof. William Osler will deliver the annual oration.

* * *

The British Medical Library Association.—At a meeting of those interested in medical libraries, held at Leeds on Saturday, January 9, 1909, it was decided unanimously to form an association of medical libraries, and a provisional committee was appointed to draw up the Constitution and Rules. Professor Osler (Oxford) was invited to become the first President and Professor Walker Hall (Bristol) and Mr. Cuthbert E. A. Clayton (Librarian, Manchester Medical Society), were asked to undertake the duties of temporary secretaries.

The following are some of the objects of the Association: (1) Interchange of those interested in medical library work and the discussion of matters associated with the fostering and care of libraries. (2) Diffusion of information as to the branches of medical literature specially catered for at different centers, and as to the value of the various books and new periodicals which are issued from time to time. (3) The promotion of measures whereby a larger number of practitioners in each center may be induced to utilize the library facilities of each district. (4) The consideration of matters connected with the present rapid increase of periodicals, publication of books, etc. (5) The opening up of better chances of advancement for library assistants. By such means there would be an inducement to parents to put their sons to such an occupation and the librarians would be able to have better material for training. (6) The exchange of duplicate books and periodicals.

When the Association is in working order it is hoped that a certain number of the libraries interested will join together to form a circle for the loan of their research and other literature.

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EDITORIAL.

REPRINTS OF MEDICAL CLASSICS.

N our last number a correspondent called attention to the desirability of being able to purchase inexpensive reprints of certain medical classics, and in our editorial columns we invited an expression of the views of our readers as to what ten American medical classics they would choose to inaugurate such a series of reprints.

It would appear that the demand for reprints is not an insistent one, for from a thousand readers we have received but two communications in response to our suggestion.

Dr. C. N. B. Camac has recently published a book entitled, "Epoch Making Contributions to Medicine and Surgery and the Allied Sciences: Being Reprints of Those Communications which First Conveyed Epoch Making Observations to the Scientific World." It will be interesting to observe what encouragement is given to the publisher by the reception accorded this book by the medical profession.

ERRATUM.

On page 54 of our last issue the name of Dr. Max Neuburger, of Vienna, should appear in the list of honorary members of the St. Louis Medical History Club.

QUERIES, ANSWERS, AND APPEALS TO READERS.

NOTE.—This department is open to subscribers and others who have questions, etc., to ask on subjects connected with medical history, biography, book-lore, etc. Where queries are not answered by the editor an appeal is made to readers to supply the desired information. If desired, queries in general and those not considered of sufficient interest to readers to warrant their publication will be answered by personal letter.

DR. HOWARD A. KELLY, 1418 Eutaw Place, Baltimore, Md., asks:

(1). Will some one tell him more of the Websters, of Albany, N. Y., printers of medical works in 1796.

(2). Of the library of Bartholin, destroyed in 1665.

(3). Whether anyone will sell or lend him catalogs of the libraries belonging to doctors, American or foreign. He has Mead.

(4). Can anyone tell him the first *medical* work illustrated by photography. Elliotson's work on "Mesmerism" (1845) has a few; and Darwin's "Expression of the Emotions" has some.

(5). Something concerning Dr. Alexander Anderson, of New York, who went to London in 1803 to perfect himself in anatomical drawing.

Dr. Alexander Anderson was born in New York City, April 21, 1775, and was the pioneer engraver on wood in America; in fact, he was the virtual *inventor* of the art on this side of the Atlantic. His father published a republican newspaper in New York City called *The Constitutional Gazette*, in opposition to the ministerial papers of Rivington and Gaine until the autumn of 1776, when the British took possession of the city and the "rebel printer" was obliged to fly for safety to Connecticut. In May, 1796, at the age of twenty-one years, young Anderson was graduated in medicine from Columbia College and received his M.D. At an early age he began to use the graver for his own amusement and became very proficient in the art. He soon abandoned the medical profession as a business to devote himself to engraving for which he had conceived an irrepressible passion, and during his long and busy life he engraved many thousands of subjects. He died January 17, 1870. A more lengthy sketch of his life will be found in *Harper's Weekly*, February 5, 1870.

(6). Information concerning Dr. Alexander Ramsay (1754-1824) who engraved his own plates for his work on "The Brain and Heart."

Consult sketch by G. P. Bradley, published in *Tr. Maine M. Assoc.*, Portland, 1883, viii, part 1, pp. 161-182.

(7). Has anyone to sell or loan a copy of Dr. G. P. Judd's "Anatomia," written, printed and illustrated by him for the use of his native assistants while he was a medical missionary in Hawaii, 1825-1873?

(8). Details concerning the medical library of Dr. Davidson, of

Breslau, Germany (5,450 lots, sold in 1881); and a catalog of the collection if anyone has one for sale.

The library of Dr. Anselme Davidson, of Breslau, was sold at Breslau by Simmel & Co., of Leipzig. The sale began March 23, 1881, and lasted eight days. The catalog of this collection entitled "*Bibliotheca Medica Davidsoniana. Catalogue de la Bibliothèque Précieuse Médicale de Feu M. le Docteur Anselme Davidson*" (175 pp.) may be secured from second-hand medical bookdealers. In it the auctioneers announce: "*La collection, nous n'hésitons pas à le dire, n'a été égalée par aucune autre de pareille spécialité, autant que nous rappelions. Aussi le propriétaire a-t-il mis plus de 40 ans à la composer! Bibliophile savant et amateur éclairé il a fait la chasse à tout ce qui rentrait dans son domaine, et par suite des incessantes recherches il est arrivé à créer une bibliothèque médicale, presque unique dans cette science, pouvant servir de guide à tout savant et amateur. L'on remarquera surtout la richesse en fait d'ouvrages relatifs à l'histoire de la médecine, l'épidémiologie et à l'obstétrique, objets des études spéciales du défunt.*" The books were widely scattered and a great many of them came to America eventually to find their final resting place in the larger medical libraries. The books belonging to this collection may be identified, not by a bookplate, but by the name "Davidson" written in a fine copper-plate hand in the upper left-hand corner of the inside front cover.

* * *

DR. ROLAND G. CURTIN, 22 South 18th Street, Philadelphia, Pa., desires to exchange bookplates with other physicians, American or foreign. Dr. Curtin's collection of medical bookplates numbers over two hundred.

NOTES AND NEWS

The Medical Library Association will hold its 12th Annual Meeting May 12, 1909, at the Library of the Surgeon-General's Office, Washington, D. C. The program includes the "President's Address," by Dr. George Dock; a paper entitled "The Queen's Closet Opened," by Mrs. Grace W. Myers; and "My Winter Experience in Books," by Prof. William Osler. Members are invited to be present at the dedicatory exercises attending the opening of the new library building of the Medical and Chirurgical Faculty of Maryland on May 13, 1909, at Baltimore, Md.



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Nos. 3-4

FRÈRE JACQUES.

BY HOWARD A. KELLY, M.D.,

of Baltimore, Md.

"Medicine, sometimes impertinently, often ignorantly, often carelessly called 'allopathy,' appropriates everything from every source that can be of the slightest use to anybody who is ailing in any way, or like to be ailing from any cause. It learned from a monk how to use antimony, from a Jesuit how to cure agues, *from a friar how to cut for stone*, from a soldier how to treat gout, from a sailor how to keep off scurvy, from a postmaster how to sound the Eustachian tube, from a dairy-maid how to prevent smallpox, and from an old market-woman how to catch the itch-insect. It borrowed acupuncture and the moxa from the Japanese heathen, and was taught the use of lobelia by the American savage."

O. W. HOLMES, "*Medical Essays*."



ONE August day in 1697 there came into Paris a man in semi-monkish garb, by name Jacques Beaulieu, better known as Frère Jacques. He was of peasant origin, uneducated, but aristocratic in intellect, and this intellect, along with a small dagger, a few pence and some letters of introduction constituted his equipment and his fortune.

His history? That of an ambitious lad from the little village of Langsonnière, Burgundy, with a taste for surgery.

His training? The friendship and patronage of a quack surgeon chiefly successful in operations for stone whom Beaulieu had met while serving in a cavalry regiment, and in whose company he afterwards travelled some five years, finally going his own way and working wonders as a lithotomist in Provence, Marseilles and other parts.

At last, armed with a letter to a canon of Notre Dame, he boldly came to Paris seeking permission to operate at the Hôtel Dieu itself.

"Imagine it," writes John Bell, the surgeon, one of his biographers, "when in the Hôtel Dieu, where, for centuries, nothing had been exhibited but the lingering cruelties of the apparatus major, where professed lithotomists laboured for hours amid the outcries of the patient to extract the stone, an operator

appeared, daring beyond all belief, making light of that operation which had been regarded as the masterpiece of surgery, who, without hesitation or fear, performed by incision what had hitherto been attempted only by force of repeated dilations! Who boldly plunged his dagger-pointed knife into the hip, thrust it home into the bladder, felt for it with the staff, then enlarged his incision upwards and downwards, and in a few moments extracted the largest stone."

Bessière, one of the Paris surgeons who saw him operate on sixty cases, thus describes his methods:

"He laid his patients upon the operating table, and, placing a pillow under his head, gave him to the assistants to hold, with the thighs elevated and the heels bent towards the buttocks. He never tied his patients. He made use of a steel staff shorter from the handle to the heel, where it bends more than ours, and he had but two, one for women, one for men. He introduced this staff (big, round and having no groove) into the bladder, and, holding it with the left hand, he pressed it so against the perineum as to make that part of the bladder project which he meant to strike with the knife. Then, taking in his right hand a long knife, dagger shaped, he plunged it into the left hip at the distance of two inches from the perineum and pushing it directly onwards, opened the body of the bladder as near as possible to its neck, never once withdrawing the bistoury till he had made an opening proportioned to the size of the stone, which he then introduced his finger to feel for and running in a conductor along with the finger he introduced the forceps upon it, seized the stone, pulled it coarsely out, indifferent to the effects of that violence with which it was extracted. . . . contents himself with a little oil and wine for a dressing and when once remonstrated with for his want of after care said, 'I have extracted the stone, God will cure him.'"

Dionis, anatomist and surgeon to Marie Therese of Austria, was present also and confirms this account, and Martin Lister, the English anatomist, who was then in Paris, says:

"He cut both by the small and the great apparatus and in both boldly thrusts a broad lancet or stiletto into the middle of the muscles of the thigh near the anus and plunges it till it meets the staff or the stone. I saw him perform the operation upon nine persons in three-quarters of an hour. Very dextrously he seemed to venture it all and put me in some disorder, and a



FRATER JACOBUS DE BEAULIEU Lithotomus
*Solentem nomen Saxis post terga regentis
 Deducit illos parca corda Vellit.
 Hic, am. frater ac est viscus qui viscera saxis
 Anusum tendens cum pulsat manum.
 Dicite, si ideo, uter qd. praeclatior horum
 Qua decet, an durum que fugat acri malum*

FRÈRE JACQUES DE BEAULIEU.
 (1651—1714.)



stouter Englishman than myself with the cruelty of his operation. However, I visited them all in their beds and found them more amazed than in pain."

The door of the Hôtel Dieu had not opened willingly, but the friendly canon had given Frère Jacques a letter to De Harley, first President of the Parliament, and only by command of the latter did Mery and the other surgeons admit Frère Jacques. Mery was honest enough to draw up a report full of warm praise, but was afterwards influenced by the jealousy of his angry confrères to return to the old method and to injure Jacques by dwelling on his failures and condemning impudently the operation he had at first so heartily approved.

Frère Jacques' failures were due to a lack of fuller knowledge of anatomy and not to the method used, but failures there were and the lithotomists triumphantly put him to severer tests day by day and then harangued on the incapacity of the operator. De Harley grew cold towards his protégé, and Jacques, who sought neither money nor fame but believing his skill to be "a gift of God" and therefore to be used, went to the Court at Fontainebleau and wrote to Duchesne, first physician to the royal princes. This doctor received him cordially and introduced him to Fagon and Felix, physician and surgeon to Louis XIV.

"This is a man who must not be neglected," said Louis, when the three learned men had been impressed by six operations by Frère Jacques. He was therefore lodged and maintained at the King's expense and returned with the Court to Paris where again he successfully operated.

De Harley saw his mistake and required a second report from the Hôtel Dieu, to the consternation of the surgeons. Had this miserable quack in monkish garb appeared again to trouble them? Were they, the great lithotomists, to become his pupils? All Paris was interested. On the 7th of April, 1698, magistrates, physicians and surgeons gathered in the Archbishop's palace. Mery opened the debate by some insipid compliments and ended with the impeachment of an operation of which he had once openly, and still secretly, acknowledged the merits. But his very violence betrayed his partisanship and induced the saner and larger-minded men present to vote in favor of Jacques operating at the Hôtel Dieu.

His enemies were defeated but not silenced; their jealous eyes watched him, their malicious tongues did him much harm. The

doors of the hospital where he operated were crowded and sentries were required to keep back the throng of spectators.

Frère Jacques cut in the same way at La Charité, and Marechal, the best lithotomist in Paris, harangued against him before the Governors who answered that they preferred to await results.

Now came disaster for Jacques and unwise but temporary wrath. Out of sixty-two patients, twenty-five died, a proportion small compared with former mortality but enough to discredit Jacques. Weary and disheartened, he retorted that the monks at La Charité had by intentionally careless after-care allowed his patients to die. But they died as well in the Hôtel Dieu, and Jacques left Paris. We find the Dutch newspapers the next year announcing him as lithotomist to the King of Holland, while the methods of this sorely tried and much-abused operator were adopted by Marechal in Paris, Rau in Holland, and later by Cheselden in England. Rau had the bad taste to adopt Jacques' method and decry its originator. He pretended so well that he only opened the body of the bladder without touching its orifice or its neck that he considerably retarded research for methods and led surgeons to do an operation which in their hands had often fatal consequences. Even the celebrated Albinus, who had seen him cut many times, was deceived; so much so, that after Rau's death he gave such a description of operating that he made many lateral methods seem wrong, for it is now obviously impossible in using the catheter to make the incision as far as Albinus imagined Rau did. The latter cut as Frère Jacques had done, that is, dividing the prostate and the neck of the bladder according to the method of Celsus. ("Observations Introchirurgiques." Joseph Covillard, 1639.)

Both Holland and Germany welcomed Jacques, and at Amsterdam Heister tells us that "Guerell, chief physician to the hospital, with several other persons of distinction, had a meeting with Jacques at the house of a nobleman (Verdun) and conversed with him and viewed his instruments; his catheter was then without a groove and his first operation was upon a lad, waiter at an inn. At this operation were assembled, by order of the Senate, the chief physician of the hospital and city, and Frère Jacques performed his operation before them with so much sleight and dexterity and in so short a time that it raised



*Frère Jacques de Beaulieu, l'ermite. Ici ce
Charitable Père fait l'opération sur un Malade de la Verrue*

*Hier tomt den Hieremijt, aan de Artzeny versien
Doctoren, Chirurgen, en andre Konstenaeren,
Sijn Edelc, sehem, sijn Konstgreep hoe hy sijnde —
Sijn vast, sijn sterke hand, sijn grond en vaddigheide.
De meeste staen verjelt die hem een Phoenix noemen:
Doch die verondert, twijst, kan hem op t beste noemen.*

De d. Breyer delendend, sijn en een ingefield van Dierd, inde Kledersjijns, in de wettende Room, 1711, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

FRÈRE JACQUES PERFORMING HIS OPERATION FOR LITHOTOMY.

"Here the Hermit shows to the learned surgeons, all
The doctors and the other scientific men
His noble secret; his skilful touch in cutting;
His firm, his steadfast hand; his principle and technique.
The most of them, amazed, call him a Phoenix bird;
But those who, silent, stand in awe, praise him the most."

admiration in all that were present and made them praise and extol our operator even before the Senate."

When Cheselden, dissatisfied with the high operation general in London hospitals, determined to imitate the operation of Frère Jacques and Rau, "he had no guide save the descriptions of Albinus, who, though himself the pupil of Rau, was himself deceived." (Bell.) Albinus, the celebrated writer and anatomist, who had attended the cliniques of Bidloo, Rau and Boerhaave, succeeded Rau in the professorship of Anatomy and Surgery at Leyden, in 1718, and was given the task of writing up Rau's life, his private museum and methods of operating. Numerous failures made Cheselden abandon not the principles of the operation but the manner of performing it, and he ungrudgingly gave Frère Jacques his full meed of praise. The first and last operations of Cheselden were essentially different. At first he imitated Jacques and Rau and "stuck the knife into the bladder between the vesiculæ seminales and tuber ischii; he stopped at the back part of the gland; all his incision lay behind the gland; *he cut the body of the bladder only.*"

A time came when Fagon himself needed a lithotomist. He had always been impressed with Frère Jacques and his method; had always been good to him, and in 1700 recalled him to Versailles, lodged him in his own house and persuaded him to go through a complete course of studies and dissection.

Fagon might have chosen Marechal or any other great European lithotomist, but elected Jacques as the operator, taking him through a course of dissections with reference to the operation. First Jacques experimented on dead bodies, the parts being dissected by Duvernet, the celebrated anatomist, and the dangers discussed with the added conference of Felix, the king's body surgeon. It was at last decided he should operate with a grooved staff, and thirty-eight operations, pronounced by Duvernet complete, were done with the improved instrument. Ferhius, a Swiss physician, writing in 1716, says "that of sixteen lately cut by Frère Jacques in Strasburg, only one died, and that an old weak man." Frère Jacques while operating in that city, whispered to Salzmann, the surgeon, "that he had left off his rude way of operating and now used a grooved staff." Thirty years' practice and 4,500 operations had made him a master lithotomist.

Surely the road to fame was now open, Kings and court

physicians his friends; great European surgeons adopting his methods, a grateful crowd of patients everywhere; but this man who held his skill as the "gift of God" had to have the lesson that "Failure is only God's road to success" stamped upon the very heart of him. Fagon was persuaded to put himself into the hands of Marechal!

So disappointment sat with Frère Jacques and failure came along to make a dismal trio, for the Maréchal de Larges, a distinguished nobleman, had asked Jacques' services for himself, and, as a precaution, had assembled at his hotel twenty-two poor persons afflicted with stone for Jacques to operate on first.

The result of these operations was splendid. Every one made a complete recovery, but alas, De Lorges died in tortures the day after the operation and Fagon recovered quickly under Marechal!

A less sensitive man would have stayed in Paris and faced the undisguised triumph of Mery and the Hôtel Dieu. Fagon, Felix, the King himself were still on his side, but Frère Jacques left Paris once more and never returned. He traveled and operated for many years in Europe, received everywhere with applause, but still preserving the character of sanctity, charity and simplicity of life. A set of gold sounds, publicly offered, could not be but ungraciously refused, but these went to the melting pot and the money so obtained to the poor.

In 1704 he was again in Amsterdam operating in the hospitals, but, Bell tells us, sorrowfully indignant that "Rau, whose rare talents and incomparable meanness of disposition kept an almost equal pace, so that we know not whether most to admire or detest the man, published, like Mery, his daily scandals, dissected Frère Jacques out of the capital, yet stole the very operation which he affected to condemn."

There is no record from the five or six friendly and adverse biographers I have consulted of any retort from Frère Jacques save the one hastily uttered against the monks of La Charité, though the court physicians of Paris aided him to write a simple and dignified justification of his methods. Even this he would not sign, but wrote in the third person.

While at Brussels, after leaving Amsterdam, he received from the Dutch senate a medal bearing the inscription "*Ob cives servatos*" and an entreaty from private friends to return.

"Why," he answered in modesty and not bitterness, "should I return when you have already a man so much above me as Rau?"

In those days of slow communication the journeyings of a great man were not noted by reporters and flashed from city to city. Mery and Rau heard little or nothing of the man they had hated and imagined him retired to that obscurity to which they would consign him. But in 1707 Frère Jacques visits Fagon, is received with delight and is offered but refuses the richest presents, only accepting passports for a journey south. The Duke of Lorraine sends for and keeps him all spring and summer, then on to the Court of Vienna summoned for a possible operation on the Emperor. (Most strange "obscurity" this). Afterwards he went to Venice and Padua, still operating and bidding rich patients give what they would to the poor, but taking no fee for himself.

Rome and the Papal benediction; afterwards without halting to his native village, Langsonnière, where he found only a few poor nephews, distributed his little money amongst them and went to live and die in Besançon, while greater surgeons continued his work, honorably acknowledging or in pitiful meanness denying the help they had received from Frère Jacques. "A most profligate abandoned wretch," writes one biographer, "who under an outward air of simplicity and self-denial concealed some secret design or other, which, perhaps, the multitude of persons that died under his hands prevented his ever putting into execution." A just appreciation of this extraordinary man can be safely left to those who have read this sketch.

DR. ADAM THOMSON, ORIGINATOR OF THE
AMERICAN METHOD OF INOCULATION
FOR SMALL-POX: AN HISTORICAL
SKETCH.

BY HENRY LEE SMITH, M.D.,
of Baltimore, Md.



R. ADAM THOMSON (—1767) was born and educated in Scotland. The date of his birth has not been ascertained. In his memorable and eloquent "Discourse on the Preparation of the Body for Small Pox," which was published in Philadelphia by Benjamin Franklin, in

1750, he refers to "the famous Monro, of Edinburgh," as one of his first masters in the healing art.

He settled in Prince George's County, in the Province of Maryland, early in the eighteenth century, and in 1748 went to Philadelphia, where he continued the practice of his profession. His services were in demand throughout the colonies because of his eminence and success as an inoculator.

Dr. Thomson was one of the original members of the Philadelphia Assembly (1748); a founder of the St. Andrew's Society of Philadelphia in 1749, and Vice-President of that body in 1751. He is credited with the leadership in the organization of the St. Andrew's Society of the State of New York, having been elected its first Vice-President in 1756, and its President the following year.

In 1738 he began his method of preparing the body for small-pox. It constituted a two weeks' course of treatment, or "cooling regimen," preparatory to inoculation, to wit: a light, non-stimulating diet, the administration of a combination of mercury and antimony, and moderate bleeding and purgation. He admitted that Boerhaave's 1392d aphorism¹ advanced the "hint" that mercury properly prepared and administered "might act as an antidote for the variolous contagion." Dr. Thomson's phenomenal success with the method convinced him that "mercury under proper management is more of a specific agent against the effects of the variolous than the venereal poison." He was careful to give it within the bounds of salivation and to modify the regimen to suit the patient's age and constitution.

In his "Discourse" he says: "On every occasion for the space of twelve years, where I have been called to prepare people for receiving the small-pox, either in the natural way or by inoculation—having prepared many for both—I have constantly used such a mercurial and antimonial medicine as Boerhaave has described, and I can honestly declare that I never saw one, so prepared, in any danger under the disease."²

His explanation of the manner in which immunity against

¹ Boerhaave's 1392d Aphorism: "Some success from antimony and mercury prompts us to seek for a specific for the small-pox in a combination of these two minerals reduced by art to an active but not to an acrimonious or corrosive state."

² Dr. Thomson makes a similar assertion in a letter which appeared in the *Maryland Gazette*, Nov. 25, 1762.

small-pox is acquired is most interesting, and suggests to readers of to-day Pasteur's exhaustion hypothesis. He states: "It seems to me highly probable that there is a certain quantity of an infinitely subtile matter which may be called the variolous fuel, equally, intimately and universally diffused through the blood of every human creature, in some more, in others less, that lies still and quiet in the body, never showing itself in any manner hitherto discovered until put in action by the variolous contagion, at which time it is totally expelled by the course of the disease."

He found the average medical practitioner of America poorly educated, and therefore a source of danger to the community. He recommends in the "Discourse" that the Legislature interpose in behalf of the safety of the people and appoint proper persons to judge of the qualifications of those permitted to practice.

Dr. Thomson delivered his "Discourse"³ before the trustees and others in the Academy of Philadelphia, on November 21, 1750. It was published by Benjamin Franklin, and was reprinted in London in 1752, and in New York in 1757. It met with favorable reviews in America, England and France. Dr. George W. Norris, who had been unable to obtain the work, commented⁴ as follows: "It is spoken of as having merit, 'being written in a modest and plain style, the arguments made use of as highly plausible, and the author as actuated with a generous desire to communicate salutary advice in the management of a distemper which has proved fatal to multitudes.'"

Dr. James Thacher refers⁵ to the "Discourse" in the following manner: "This production was highly applauded both in America and Europe, as at that period the practice of inoculation was on the decline. The author states that inoculation was so

³ "A Discourse on the Preparation of the Body for the Small-pox; and the Manner of Receiving the Infection. As it was Deliver'd in the Publick Hall of the Academy, before the Trustees and Others, on Wednesday, the 21st of November, 1750." v, 7-24. pp., 4to. *Philadelphia, B. Franklin & D. Hall, 1750.*

Copies of the original Franklin print may be seen in the Library of the Surgeon-General's Office, Washington, D. C., in the Library of the College of Physicians of Philadelphia, and in the Libraries of the Johns Hopkins Hospital and of the Medical and Chirurgical Faculty of Maryland, Baltimore.

⁴ In his "The Early History of Medicine in Philadelphia." *Phila.*, 1886. Page 106.

⁵ *American Medical Biography*, Boston, 1828, Vol. I, p. 66.

unsuccessful at Philadelphia that many were disposed to abandon the practice; wherefore, upon the suggestion of the 1392d aphorism of Boerhaave, he was led to prepare his patients by a composition of antimony and mercury, which he had employed for twelve years with uninterrupted success."

Drs. Redman and Kearsley, of Philadelphia, and others, first opposed the method, but later it was universally adopted in the colonies and was favorably received in England. It soon became known as the American method for inoculation, and was employed with gratifying results, notably by Dr. Gale, of Connecticut, by Dr. Alexander Garden, of Charleston, S. C., by Dr. McKane, of New Jersey, and by Dr. Alexander Hamilton, of New York. It was introduced as a routine procedure in the first inoculating hospitals which were established near Boston, Massachusetts, in February, 1764. Dr. William Barnett, who used the method, was called from Philadelphia to supervise the work because of his reputation there as a successful inoculator. In England the method was highly recommended by Huxham, Woodward, and others.

Woodville quotes ⁶ from Dr. Gale's "Dissertation on the Inoculation of the Small-pox in America" as follows: "Before the use of mercury and antimony, in preparing persons for inoculation, one of 100 of the inoculated died, but since only one of 800. * * * By the last accounts 3,000 had recovered from inoculation in the new method by the use of mercury, and five only had died, viz.: children under five years of age." Dr. Gale and others conceded Dr. Thomson to be the most successful inoculator in America.

On November 25, 1762, there appeared in the *Maryland Gazette* a long and scholarly letter written by Dr. Thomson, in which he laments the fact that his method of inoculation had been taken up by quacks and reduced by them to "a matter of merchandise." He particularly condemned a certain Mr. Barnard, of New Jersey, whom he styled as "a man of little or no education in physic, or indeed in anything else," and also as "the Jersey secret monger." It seems that Barnard had learned the details of Dr. Thomson's "cooling regimen" from a reputable physician, and had used it in 1,000 cases, with but two or three

⁶ "The History of the Inoculation of the Small-pox in Great Britain," Lond., 1796, Vol. I, pp. 341-343.

deaths, and these occurred "in very young children who were said to have died of other disorders." Barnard gave Dr. Thomson no credit for his success, but spoke of the drugs used as "specific remedies." He was known to have sold the secret of the "specific remedies" to other charlatans for a "piece of money."

On the other hand, in the letter quoted, Dr. Thomson writes: "It gives me pleasure to do justice to the judgment and candor of Dr. McKane, of New Brunswick in the Jerseys, on this occasion; for he inoculated a very considerable number, the same time with Mr. Barnard, but was so far from acting the mean and ungrateful part complained of, that he honestly owned all of his patients were prepared in the manner directed in my discourse *

* * and he told me further, that he never gave his preparatory medicines in such a manner as to affect the salivary glands, and his success was very great, having never had a patient, so prepared, in the smallest danger." And again (*loc. cit.*) he thanks Dr. Alexander Garden, of Charleston, S. C., for his honesty in stating in public that the uncommon success following the inoculation of a great number of individuals during a very fatal epidemic of small-pox in 1759, was entirely due to the employment of the method recommended in the "Discourse."

Dr. Thomson married the widow of James Wardrop, Esq., of Virginia. She was Lettice Lee, daughter of Philip Lee, of Virginia, a great grand-daughter of Richard Lee, the emigrant. After Dr. Thomson's death, she married Col. Joseph Sim. She had issue only by Dr. Thomson—Mary Lee Thomson, who married Col. Williams, of Maryland, and Alice Corbin Thomson, who married Capt. John Hawkins, a gallant officer of the 3d Virginia Regiment of the Revolutionary Army.

Dr. Adam Thomson died in New York City on September 18, 1767.⁷ The following notice of his death appeared three days later in the *New York Mercury*: "On Friday morning early, died here, Adam Thomson, Esq., a physician of distinguished abilities in his profession, well versed in polite literature, and of unblemished honor and integrity as a gentleman."

2701 N. Calvert Street, Baltimore, Md.

⁷ A number of authors have erroneously given the date of Dr. Thomson's death as 1768.

THE WRITINGS OF BENJAMIN FRANKLIN
PERTAINING TO MEDICINE AND
THE MEDICAL PROFESSION.

(Continued.)

BY THEODORE DILLER, M.D.,

of Pittsburgh, Pa.

THE PENNSYLVANIA HOSPITAL.

Franklin helped found not only the first hospital, but also the first medical school in America; and if he had no other claim upon us, he should be forever highly honored by the American Medical Profession.

Franklin's account of the founding of the Pennsylvania Hospital, taken from his autobiography, at once challenges our interest and admiration. The successful method of raising funds for America's first hospital devised by Franklin has been copied by many hospital managers in the succeeding generations down to this day.

"In 1751, Dr. Thomas Bond, a particular friend of mine, conceived the idea of establishing a hospital in Philadelphia (a very beneficent design, which has been ascrib'd to me, but was originally his), for the reception and cure of poor sick persons, whether inhabitants of the province or strangers. He was zealous and active in endeavoring to procure subscriptions for it, but the proposal being a novelty, in America, and at first not well understood, he met with but small success.

"At length he came to me with the compliment that he found there was no such thing as carrying a public-spirited project through without my being concerned in it. 'For,' says he, 'I am often ask'd by those to whom I propose subscribing, "Have you consulted Franklin upon this business?" And when I tell them that I have not (supposing it rather out of your line) they do not subscribe, but say they will consider of it.' I inquired into the nature and probable utility of his scheme, and receiving from him a very satisfactory explanation, I not only subscribed to it myself, but engaged heartily in the design of procuring subscriptions from others. Previously, however, to the solicitation, I endeavored to prepare the minds of the people by writing on the subject in the newspapers, which was my usual custom in such cases, but which he had omitted.

“The subscriptions afterwards were more free and generous; but beginning to flag, I saw they would be insufficient without some assistance from the Assembly, and therefore proposed to petition for it, which was done. The country members did not at first relish the project; they objected that it could only be serviceable in the city, and therefore the citizens themselves should be at the expense of it; and they doubted whether the citizens themselves approved of it. My allegation on the contrary, that it met with such approbation as to leave no doubt of our being able to raise two thousand pounds by voluntary donations, they considered as a most extravagant supposition, and utterly impossible.

“On this I formed my plan; and, asking leave to bring a bill for incorporating the contributors according to the prayer of their petition and granting them a blank sum of money, which leave was obtained chiefly on the consideration that the House could throw the bill out if they did not like it, I drew it so as to make the important clause a conditional one, *viz.*: And be it enacted, by the authority aforesaid, that when the said contributors shall have met and chosen their managers and treasurer, *and shall have raised by their contributions a capital stock of —value* (the yearly interest of which is to be applied to the accommodating of the sick poor in the said hospital, free of charge for diet, attendance, advice, and medicine), *and shall make the same appear to the satisfaction of the speaker of the Assembly for the time being*, that *then* it shall and may be lawful for the said speaker, and he is hereby required, to sign an order on the provincial treasurer for the payment of two thousand pounds, in two yearly payments, to the treasurer of the said hospital, to be applied to the founding, building, and finishing of the same).

“This condition carried the bill through; for the members, who had opposed the grant, now conceived they might have the credit of being charitable without the expense, agreed to its passage, and then, in soliciting the subscriptions among the people, we urged the conditional promise of the law as an additional motive to give, since every man's donation would be doubled; thus the clause worked both ways. The subscriptions accordingly soon exceeded the requisite sum, and we claimed and received the public gift, which enabled us to carry the design into execution. A convenient and handsome building was soon erected; the institution has by constant experience been found

useful, and flourishes to this day; and I do not remember any of my political manœuvres, the success of which gave me at the time more pleasure, or wherein, after thinking of it, I more easily excused myself for having made some use of cunning."

Although the idea of founding the Pennsylvania Hospital originated with Dr. Thomas Bond, to whom should be given full credit, yet, without the active interest and aid of Franklin, it is unlikely that the hospital would have been built at that time. The petition to the Assembly of Pennsylvania was drawn up by Franklin. The first President of the Board of Managers was Joshua Crosby; and Benjamin Franklin filled the office of clerk. Upon the death of Mr. Crosby, in 1754, Franklin succeeded him as President of the Board of Managers. The design for the seal for the hospital was devised by Franklin and Dr. Thomas Bond. The inscription for the corner-stone for the hospital was written by Franklin and reads as follows:

IN THE YEAR OF CHRIST
MDCCLV
GEORGE THE SECOND HAPPILY REIGNING
(FOR HE SOUGHT THE HAPPINESS OF HIS PEOPLE)
PHILADELPHIA FLOURISHING
(FOR ITS INHABITANTS WERE PUBLICK SPIRITED)
THIS BUILDING
BY THE BOUNTY OF THE GOVERNMENT,
AND OF MANY PRIVATE PERSONS,
WAS PIOUSLY FOUNDED,
FOR THE RELIEF OF THE SICK AND MISERABLE;
MAY THE GOD OF MERCIES
BLESS THE UNDERTAKING.

FRANKLIN'S CONNECTION WITH THE FIRST MEDICAL SCHOOL, IN
AMERICA, AFTERWARDS THE MEDICAL DEPARTMENT OF THE
UNIVERSITY OF PENNSYLVANIA.

The College of Philadelphia, which had been founded by Franklin, organized its medical department through the efforts of Drs. John Morgan and William Shippen, in 1766, when systematic lectures were begun in this the first medical school in the United States. The first commencement of the Medical Department of the College of Philadelphia was held in 1768. Later dissensions occurred, and on November 27, 1779, the Legislature repealed the charter of the College of Philadelphia and conferred all the powers and privileges which it had enjoyed upon "The

University of the State of Pennsylvania." The friends of the College were very much displeased by this action and worked steadily and persistently for the repeal of the bill. They finally succeeded, and on March 6, 1783, the old college charter again became operative. "Benjamin Franklin was in the forefront of those who fought for the rights of the College. He had been in Europe at the time the bill constituting the University had been passed. The founders of the University had taken the liberty of making him one of its trustees, but immediately on his return he had withdrawn his name and joined with his old colleagues of the College." (Packard.)

On November 17, 1789, the trustees of the College, of which Franklin was now President, published a set of rules governing the conferring of medical degrees.

FRANKLIN'S RULES OF HEALTH; WITH SOME ACCOUNT OF HIS
OWN HEALTH.

Franklin states that his father "had an excellent constitution of the body," and that "I never knew either my father or mother to have any sickness but that of which they dy'd, he at 89, and she at 85 years of age."

Franklin must, therefore, have inherited his splendid constitution from his parents, without which his career could have been neither so long nor so glorious.

He inculcated the habit of moderation in eating and drinking, and warned against free indulgence of alcoholic drinks at a very early age. When sixteen years of age, he wrote in the *New England Courant* the following lines on drinking:

"I doubt not but *moderate* drinking has been improved for the Diffusion of Knowledge among the ingenious Part of Mankind, who want the Talent of a ready Utterance, in order to discover the Conception of their Minds in an entertaining and intelligible Manner. 'Tis true, drinking does not improve our Faculties, but it enables us to use them, and therefore, I conclude, that much Study and Experience, and a little Liquor are of absolute necessity for some tempers, in order to make them accomplished Orators."

It was about this time that he became a vegetarian, a practice which he followed up after he left Boston and became a resident of Philadelphia. Of this he tells us in his autobiography from which I quote.

"When about sixteen years of age I happened to meet with a book, written by one Tryon, recommending a vegetable diet. I determined to go into it. My brother, being yet unmarried, did not keep house, but boarded himself and his apprentices in another family. My refusing to eat flesh occasioned an inconveniency, and I was frequently chid for my singularity. I made myself acquainted with Tryon's manner of preparing some of his dishes, such as boiling potatoes or rice, making hasty pudding, and a few others, and then proposed to my brother, that if he would give me, weekly, half the money he paid for my board, I would board myself. He instantly agreed to it, and I presently found that I could save half what he paid me. This was an additional fund for buying books.

"I believe I have omitted mentioning that, in my first voyage from Boston, being becalm'd off Block Island, our people set about catching cod, and hauled up a good many. Hitherto I had stuck to my resolution of not eating animal food, and on this occasion I consider'd with my master Tryon, the taking every fish as a kind of unprovoked murder, since none of them had or ever could do us any injury that might justify the slaughter. All this seemed very reasonable. But I had formerly been a great lover of fish, and, when this came hot out of the frying-pan, it smelt admirably well. I balanced sometime between principle and inclination, till I recollected that, when the fish were opened, I saw smaller fish taken out of their stomachs; then thought I, 'If you eat one another, I don't see why we mayn't eat you.' So I din'd upon cod very heartily, and continued to eat with other people, returning only now and then occasionally to a vegetable diet. So convenient a thing it is to be a *reasonable creature*, since it enables one to find or make a reason for every thing one has a mind to do.

"Keimer wore his beard at full length, because somewhere in the Mosaic law it is said, 'Thou shalt not mar the corners of thy beard.' He likewise kept the Seventh day, Sabbath; and these two points were essentials with him. I disliked both; but agreed to admit them upon condition of his adopting the doctrine of using no animal food. 'I doubt,' said he, 'my constitution will not bear that.' I assured him it would, and that he would be better for it. He was usually a great glutton, and I promised myself some diversion in half starving him. He agreed to try the practice, if I would keep him company. I did so, and we

held it for three months. We had our victuals dress'd and brought to us by a woman in the neighborhood, who had from me a list of forty dishes, to be prepar'd for us at different times, in all which there was neither fish, flesh nor fowl, and the whim suited me the better at this time from the cheapness of it, not costing us above eighteen pence sterling each per week. I have since kept several Lents most strictly, leaving the common diet for that, and that for the common, abruptly, without the least inconvenience, so that I think there is little in the advice of making those changes by easy gradations. I went on pleasantly, but poor Keimer suffered grievously, tired of the project, longed for the flesh-pots of Egypt, and order'd a roast pig. He invited me and two women friends to dine with him; but, it being brought too soon upon the table, he could not resist the temptation, and ate the whole before we came."

Writing of his first sojourn in London, when he worked there as a printer, Franklin makes these observations in his autobiography:

"At my first admission into this printing-house I took to working at press, imagining I felt a want of bodily exercise I had been us'd to in America, where presswork is mixed with composing. I drank only water; the other workmen, near fifty in number, were great guzzlers of beer. On occasion, I carried up and down stairs a large form of types in each hand, when others carried but one in both hands. They wondered to see, from this and several instances, that the Water-American, as they called me, was stronger than themselves, who drank strong beer! We had an alehouse boy who attended always in the house to supply the workmen. My companion at the press drank every day a pint before breakfast, a pint at breakfast with his bread and cheese, a pint at dinner, a pint in the afternoon about six o'clock, and another when he had done his day's work. I thought it a detestable custom; but it was necessary, he supposed, to drink strong beer that he might be *strong* to labor. I endeavoured to convince him that the bodily strength afforded by beer could only be in proportion to the grain of flour of the barley dissolved in the water of which it was made; and that there was more flour in a pennyworth of bread; and therefore, if he would eat that with a pint of water, it would give him more strength than a quart of beer. He drank on, however, and had four or five shillings to pay out of his wages every Saturday night for that

muddling liquor; an expense I was free from. And thus these poor devils keep themselves always under." While working as a printer in London he tells us that "Our supper was only half an anchovy each, on a very little strip of bread and butter, half a pint of ale between us." The object of this economical fare was really to save money with which to buy books rather than for hygienic reasons.

Franklin approved of water used internally and also externally. Swimming, he held, was one of the most healthful and agreeable exercises in the world and a remedy for diarrhœa. He strongly advocated warm baths, "for cleanliness and purifying the skin"; and he states, "I speak from my own experience, and that of others, to whom I have recommended this."

In 1735 he suffered from some ailment characterized by suppuration from the lungs. Just prior to this time, he thought he had avoided an illness by drinking very freely of cold water and by sweating himself. This treatment is interesting, for at that time and for years afterward it was the practice to forbid fever patients water.

To relieve some skin affection of which he began to suffer in 1778, he states, "I took a hot bath twice a week, two hours at a time." He assures us that he derived great benefit from this prolonged bathing and suffered afterwards by neglecting to take them. Some years later, he took a daily prolonged warm bath in a copper vessel shaped like a slipper. Cutler states he would sit in the heel of this vessel with his legs under the vamp, while on the instep he had fixed a place for his books so that he might read while in the bath.

Franklin's early advocacy of the free use of water internally and externally, including the use of the prolonged warm bath, seems very remarkable in view of some of the later developments in medical practice. The prolonged warm bath in skin affections and as a sedative for the various psychoses seems to us very modern; and it is only a very few years since the bath has become the chief therapeutic agent in the treatment of typhoid and other fevers.

Franklin, too, was a strong advocate of fresh air, as will be seen later.

He argued against the use of tobacco and never indulged in it. Although very temperate in the use of alcoholic liquors in

his earlier life, he appears to have grown rather indulgent in this respect as he grew older.

Franklin formulated the following hygienic and dietetic rules when he published "Poor Richard."

Rules of Health and Long Life, and to Preserve from Malignant Fevers, and Sickness in General.

"Eat and drink such an exact quantity as the constitution of thy body allows of, in reference to the service of the mind.

"They that study much, ought not to eat so much as those that work hard, their digestion being not so good.

"The exact quantity and quality being found out, is to be kept to constantly.

"Excess in all other things whatever, as well as in meat and drink, is also to be avoided.

"Youth, age and sick require a different quantity.

"And so do those contrary complexions; for that which is too much for a flegmatick man, is not sufficient for a cholerick.

"The measure of food ought to be (as much as possibly may be) exactly proportionable to the quality and condition of the stomach, because the stomach digests it.

"That quantity that is sufficient, the stomach can perfectly concoct and digest, and it sufficeth the due nourishment of the body.

"A greater quantity of some things may be eaten than of others, some being of lighter digestion than others.

"The difficulty lies, in finding out an exact measure; but eat for necessity, not pleasure, for lust knows not where necessity ends.

"Would'st thou enjoy a long life, a healthy body, and a vigorous mind, and be acquainted also with the wonderful works of God? Labor in the first place to bring thy appetite into subjection to reason."

Rules to Find Out a Fit Measure of Meat and Drink.

"If thou eatest so much as makes thee unfit for study, or other business, thou exceedest the due measure.

"If thou art dull and heavy after meat, it's a sign thou hast exceeded the due measure; for meat and drink ought to refresh the body, and make it cheerful, and not to dull and oppress it.

"If thou findest these ill symptoms, consider whether too

much meat, or too much drink occasions it, or both, and abate by little and little, till thou findest the inconveniency removed.

"Keep out of the sight of feasts and banquets as much as may be; for 'tis more difficult to refrain good cheer when it's present, than from the desire of it when it is away; and like you may observe in the objects of all the other senses.

"If a man casually exceeds, let him fast the next meal, and all may be well again, provided it be not too often done; as if he exceed at dinner, let him refrain at supper, etc.

"A temperate diet frees from diseases; such are seldom ill, but if they are surprised with a sickness, they bear it better, and recover sooner; for most distempers have their original from repletion.

"Use now and then, a little exercise a quarter of an hour before each meal, as to swing your arms about with a small weight in each hand; to leap, or the like, for that stirs the muscles of the breast.

"A temperate diet arms the body against all external accidents; so that they are not so easily hurt by heat, cold or labor; if they at any time should be prejudiced, they are more easily cured, either of wounds, dislocations, or bruises.

"But when malignant fevers are rife in the country or city where thou dwelst, 'tis advisable to eat and drink more freely, by way of prevention, for these diseases that are not caused by repletion, and seldom attack full-feeders.

"A sober diet makes a man die without pain; it maintains the senses in vigor; it mitigates the violence of passions and affections.

"It preserves the memory, it helps the understanding, it allays the heat of lust; it brings a man to a consideration of his latter end; it makes the body a fit tabernacle for the Lord to dwell in; which makes us happy in this world, and eternally happy in the world to come, through Jesus Christ our Lord and Saviour."

Writing to his son William from London, on August 19, 1772, Franklin discusses, in a most interesting way, the value of exercise.

"In yours of May 14th, you acquaint me with your indisposition, which gave me great concern. The resolution you have taken to use more exercise is extremely proper; and I hope you will steadily perform it. It is of the greatest importance to pre-

vent diseases, since the cure of them by physic is so very precarious.

"In consideration of the different kinds of exercise, I have thought, that the *quantum* of each is to be judged of, not by time or distance, but by the degree of warmth it produces in the body. Thus, when I observe, if I am cold when I get into a carriage in a morning, I may ride all day without being warmed by it; that, if on horseback, my feet are cold, I may ride some hours before they become warm; but if I am ever so cold on foot, I cannot walk an hour briskly, without glowing from head to foot by the quickened circulation, I have been ready to say (using round numbers without regard to exactness, but merely to mark a great difference) that there is more exercise in *one* mile's riding on horseback, than in *five* in a coach; and more in *one* mile's walking on foot, than *five* on horseback; to which I may add, that there is more in walking *one* mile up and down stairs, than in *five* on a level floor. The two latter exercises may be had within doors when the weather discourages going abroad; and the last may be had when one is pinched for time, as containing a great quantity of exercise of the latter compendious kind. By use of it I have in forty swings quickened my pulse from sixty to a hundred beats in a minute, counted by a second watch; and I suppose the warmth generally increases with quickness of pulse."

As Franklin grew older he relaxed many of the excellent hygienic and dietetic rules by which he had been governed in his early life. Indeed, he himself often violated the maxims which were inculcated by "Poor Richard."

That he grew to appreciate the pleasures of the table may be seen by the following remark he once made:

"Many people are fond of accounts of old buildings and monuments, but for one, I confess that if I could find in any Italian travels a receipt for making Parmesan cheese it would give me more satisfaction than a transcript of any inscription from any old stone whatever."

In 1757 he referred to himself as "Dr. Fatsides," and even before this he admits to "a little natural indolence." "In 1778, Adams writes to me that he 'loves his Ease, hates to offend, and seldom gives any opinion until obliged to do so.'"

Later in his life he writes of himself: "For my own part," he says, "everything of difficult discussion, and that requires close attention of mind and an application of long continuance,

grows irksome to me, and where there is not some absolute necessity for it, as in the settlement of accounts, or the like, I am apt to indulge the indolence usually attending age, in postponing such business from time to time; though continually resolving to do it." For a time Franklin combatted this tendency, but soon again relapsed into his old habits.

In 1727 Franklin was taken down with his first illness, a pleurisy, which he tells us nearly carried him off. While convalescing he regretted "that I must now, sometime or other, have all that disagreeable work to do over."

In 1749 Franklin began to suffer from the gout, which troubled him at intervals during the remainder of his life. The attacks were at first not serious; and once for a period of five years he was free from attacks.

He wrote his wife from London, December 21, 1768: "Walking a great deal tires me less than it used to do. I feel stronger and more active. Yet I would not have you think that I fancy I shall grow young again. I know that according to the Course of Nature I cannot at most continue much longer, and that the living even of another Day is uncertain. I therefore now form no Schemes, but such as are of immediate Execution; indulging myself in no future Prospect except one, that of returning to Philadelphia, there to spend the Evening of Life with my Friends and Family." Again on June 10, 1760:

"On Friday came on a Fit of the Gout, from which I had been free Five Years. Immediately the Inflammation and Swelling in my throat disappeared; my foot swelled greatly, and I was confined about three Weeks; since which I am perfectly well, the Giddiness and every other disagreeable symptom having quite left me." Again on May 5, 1772:

"I thank you for your Advice about putting back a Fit of the Gout. I shall never attempt such a Thing. Indeed, I have not much occasion to complain of the Gout, having had but two slight Fits since I came last to England."

Writing to General Washington from Philadelphia, on June 21, 1776, Franklin says: "I am just recovering from a severe Fit of the Gout which has kept me from Congress almost ever since you left us, so that I know little of what has pass'd there, except that a Declaration of Independence is preparing."

In Franklin's well-known dialogues between himself and the gout was a humorous note to Madame Brillon. There is much

besides humor in the dialogue. It clearly indicates Franklin's appreciation of the conservative and corrective value of diseases. In spite of his suffering he was able to recognize that the pains of the gout were not an unmixed evil.

In 1779, while at the court of France, a serious seizure of gout interfered with his diplomatic duties.

Franklin's account of his treatment of the gout is worth quoting:

"I forgot to acquaint you," he told his friend, Dr. Small, "that I had treated it (my gout) a little cavalierly in its last accesses. Finding one night that my foot gave me more pain after it was covered warm in bed, I put it out of bed naked; and perceiving it easier, I let it remain longer than I had at first designed, and at length fell asleep, leaving it there till morning. The pain did not return, and I grew well. Next winter, having a second attack, I repeated the experiment; not with such immediate success in dismissing the gout, but constantly with the effect of rendering it less painful, so that it permitted me to sleep every night. I should mention that it was my son who gave me the first intimation of this practice. He being in the old opinion, that the gout was to be drawn out by transpiration; and having heard me say, that perspiration was carried on more copiously when the body was naked than when clothed, he put his foot out of bed to increase that discharge, and found ease by it, which he thought a confirmation of the doctrine. But this method requires to be confirmed by more experiments before one can conscientiously recommend it."

Franklin complained of his eyesight as early as 1755. In 1776 he devised a pair of spectacles for himself, each glass containing two lenses joined together by a horizontal line in the center. The upper lense for distance and the lower one for near vision.

The following extracts from a letter written to his wife, dated London, Nov. 22, 1757, giving an account of his illness, his behavior as a patient, etc., are of interest:

"MY DEAR CHILD:

"During my illness, which continued near eight weeks, I wrote you several little letters, as I was able. The last was by the packet which sailed from Falmouth above a week since. In that I informed you, that my intermittent fever, which had continued to harass me, by frequent relapses, was gone off, and I had ever

since been gathering strength and flesh. My doctor, Fothergill, who had forbid me the use of pen and ink, now permits me to write as much as I can without over-fatiguing myself, and therefore I sit down to write more fully than I have hitherto been able to do.

"The second of September I wrote to you that I had had a violent cold and something of a fever, but that it was almost gone. However, it was not long before I had another severe cold, which continued longer than the first, attended by great pain in my head, the top of which was very hot, and when the pain went off, very sore and tender. These fits of pain continued sometimes longer than at others; seldom less than 12 hours, and once 36 hours. I was now and then a little delirious: they cupped me on the back of the head, which seemed to ease me for the present; I took a great deal of bark, both in substance and infusion, and too soon thinking myself well, I ventured out twice, to do a little business and forward the service I am engaged in, and both times got fresh cold and fell again; my good doctor grew very angry with me for acting contrary to his cautions and directions, and obliged me to promise more observance for the future. He attended me very carefully and affectionately; and the good lady of the house nursed me kindly; Billy was also of great service to me, in going from place to place, where I could not go myself, and Peter was very diligent and attentive. I took so much bark in various ways that I began to abhor it; I durst not take a vomit, for fear of my head; but at last I was seized one morning with a vomiting and purging, the latter of which continued the greater part of the day, and I believe was a kind of crisis to the distemper, carrying it clear off; for ever since I feel quite lightsome, and am every day gathering strength; so I hope my seasoning is over, and that I shall enjoy better health during the rest of my stay in England.

"It is now twelve days since I began to write this letter, and I still continue well, but have not yet quite recovered my strength, flesh, or spirits. I every day drink a glass of infusion of bark in wine, by way of prevention, and hope my fever will no more return; on fair days, which are but few, I venture out about noon. The agreeable conversation I meet with among men of learning, and the notice taken of me by persons of distinction, are the principal things that soothe me for the present, under this painful absence from my family and friends. Yet those

would not keep me here another week, if I had not other inducements; duty to my country, and hopes of being able to do it service."

As is well known, Franklin suffered stone in the bladder for many years, which was very painful during the last few years of his life. It appears that he first became aware that he had a stone in 1783, when he was seventy-seven years of age. Concerning the stone he wrote to John Jay:

"It is true, as you have heard, that I have the stone, but not that I had thoughts of being cut for it. It is as yet very tolerable. It gives me no pain but when in a carriage on the pavement, or when I make some sudden quick movement. If I can prevent its growing larger, which I hope to do by abstemious living and gentle exercise; I can go on pretty comfortably with it to the end of my journey, which can now be at no great distance. I am cheerful, enjoy the company of my friends, sleep well, have sufficient appetite, and my stomach performs well its functions. The latter is very material to the preservation of health. I therefore take no drugs lest I should disorder it. You may judge that my disease is not very grievous, since I am more afraid of the medicines than the malady."

Franklin also suffered from a cutaneous affection of which he writes in several letters.

"To-morrow I set out with my friend, Dr. Pringle (Sir John), on a journey to Pymont, where he goes to drink the waters; but I hope more for the air and the exercise, having been used, as you know, to have a journey once a year, the want of which last year has, I believe, hurt me, so that, though I was not quite to say sick, I was often ailing last Winter, and through the Spring." He comments upon a skin affection with which he was now troubled, noting that it appeared after eating freely of beef, and sometimes after a long confinement of writing with little exercise and which he was told was scorbutic. In 1773, he placed himself under the care of his good friend, Sir John Pringle, on account of a scab or scurf about the head. Sir John ordered a mercurial wash and a physic. Franklin states, "It slowly left that place, but appeared in other parts of my head." The physician also advised abstinence from salt meat and cheese, which advice Franklin "didn't much follow, often forgetting it."

He complained during his attendance upon Congress of frequent attacks of dizziness. He suffered also from a number of

large boils about this time. In 1776, when seventy years of age, Franklin wrote from Paris where he had lately taken up his residence:

"I lived chiefly on salt beef, the fowls being too hard for my teeth. But, being poorly nourished, I was very weak at my arrival; boils continued to vex me, and the scurf extending over all the small of my back, on my sides, my legs, and my arms, besides what continued under my hair. I applied to a physician, who ordered me Mr. Bellosto's pills and an infusion of a root called ——. I took the infusion a while, but it being disagreeable, and finding no effect, I omitted it. I continued to take the pills, but finding my teeth loosening, and that I had lost three, I desisted the use of them. I found that bathing stopped the progress of the disorder. I therefore took the hot bath twice a week, two hours at a time, till this last summer. It always made me feel comfortable, as I rubbed off the softened scurf in the warm water; and I otherwise enjoyed exceeding good health. I stated my case to Dr. Ingenhousz, and desired him to show it to Sir J. P., and obtain his advice. They sent me from London some medicine, but Dr. Ingenhousz proposing to come over soon, and the affair not pressing, I resolved to omit the medicine till his arrival."

It is interesting to note in this account that the loosening of the teeth of which Franklin complained, was probably due to salivation. Dr. Franklin's own efforts, with those of Dr. Ingenhousz and Sir John Pringle, to combat the disease are all matters of interest to physicians.

In 1779 Dr. Franklin wrote to a friend: "I can give you no good account. I have a long time been afflicted with almost constant and grievous pain, to combat which I have been obliged to have recourse to opium, which indeed has afforded me some ease from time to time, but then it has taken away my appetite and so impeded my digestion that I am become totally emaciated, and little remains of me but a skeleton covered with a skin."

When an old man and reflecting on his past life and his bodily ailments, Franklin writes: "One means of becoming content with one's situation is the comparing it with a worse. Thus, when I consider how many terrible diseases the human body is liable to, I comfort myself that only three incurable ones have fallen to my share, viz.: the gout, the stone, and old age; and these have

not yet deprived me of my natural cheerfulness, my delight in books, and my enjoyment of social conversation."

When the time arrived for him to leave France, in 1783, he was so infirm by reason of the gout and the stone that it became a question as to whether he could make the voyage. Marie Antoinette came to his rescue with an offer of a litter, carried by means of large mules. It was in this fashion that the great philosopher made his wonderful, triumphal march from Paris to the seaboard, where he embarked for home.

After his arrival in Philadelphia he had to be carried to the State House in a litter. He was a member of the Federal Convention. All his speeches were read by his colleague, Joseph Wilson, as Franklin was unable to stand on his feet.

In a letter to Dr. Ingenhousz, dated Philadelphia, October 24, 1788, Franklin writes:

"You have always been kind enough to interest yourself in what relates to my health. I ought therefore to acquaint you with what appears to me something curious respecting it. You may remember the cutaneous malady, I formerly complained of, and which you and Dr. Pringle favored me with prescriptions and advice. It vexed me near fourteen years, and was, the beginning of this year, as bad as ever, covering almost my whole body, except my face and hands; when a fit of the gout came on, without very much pain, but a swelling in both feet, which at last appeared also in both knees, and then in my hands. As these swellings increased and extended, the other malady diminished, and at length disappeared entirely. These swellings have sometimes since begun to fall, and are now almost gone; perhaps the cutaneous disease may return, or perhaps it is worn out. I may hereafter let you know what happens. I am on the whole much weaker than when it began to leave me. But possibly that may be the effect of age, for I am now near eighty-three, the age of commencing decrepitude."

Dr. John Jones, his attending physician, has thus written of Franklin's last illness:

"The stone, with which he had been afflicted for several years, had for the last twelve months confined him chiefly to his bed; and during the extremely painful paroxysms he was obliged to take large doses of laudanum to mitigate his torture; still, in the intervals of pain, he not only amused himself with reading and conversing cheerfully with his family, and a few friends who

visited him, but was often employed in doing business of a public as well as private nature, with various persons who waited on him for that purpose; and in every instance displayed not only that readiness and disposition of doing good which was the distinguishing characteristic of his life, but the fullest and clearest possession of his uncommon mental abilities; and not unfrequently indulged himself in those '*jeux d'esprit*' and entertaining anecdotes, which were the delight of all who heard him. About sixteen days before his death he was seized with a feverish indisposition, without any particular symptoms attending it, till the third or fourth day, when he complained of a pain in the left breast, which increased till it became extremely acute, attended with a cough and laborious breathing. During this state when the severity of his pain drew forth a groan of complaint, he would observe—that he was afraid he did not bear them as he ought—acknowledged his grateful sense of the many blessings he had received from that Supreme Being, who had raised him from small and low beginnings to such high rank and consideration among men—and made no doubt but his afflictions were kindly intended to wean him from a world in which he was no longer fit to act the part assigned him. In this frame of body and mind he continued till five days before his death, when his pain and difficulty of breathing entirely left him, and his family were flattering themselves with the hopes of his recovery, when an imposthumation, which had formed itself in his lungs, suddenly burst and discharged a great quantity of matter, which he continued to throw up while he had sufficient strength to do it; but, as that failed, the organs of respiration became gradually oppressed—a calm lethargic state succeeded—and, on the 17th of April, 1790, about eleven o'clock at night, he quietly expired, closing a long and useful life of eighty-four years and three months."

Dr. Rush wrote to Dr. Price:

"The papers will inform you of the death of our late friend, Dr. Franklin. The evening of his life was marked by the same activity of his moral and intellectual powers which distinguished its meridian. His conversation with his family upon the subject of his dissolution was free and cheerful. A few days before he died, he rose from his bed and begged that it might be made up for him so *that he might die in a decent manner*. His daughter told him she hoped he would recover and live many years longer. He calmly replied, 'I hope not.' Upon being advised to change

his position in bed, that he might breathe easy, he said, 'A dying man can do nothing easy.' All orders and bodies of people have vied with each other in paying tributes of respect to his memory."

FRANKLIN AS A MEDICAL BOOK PUBLISHER.

In days when but very few works on medicine were written in America, Franklin deserves mention as a medical book publisher of note. Among the works which he published or reprinted are the following:

In 1732 he reprinted a book originally published in London, dealing with "The Horror of the Gout," which set forth that the disease is "one of the greatest Blessings which can befall mortal man."

In 1734 he published a new edition of a book written by John Tennent entitled, "Every man his own Doctor; or the Poor Planter's Physician."

In 1741 Franklin printed the work of his friend, Dr. Cadwallader Colden, of New York, entitled "Essay on the Iliac Passion."

In 1751 he printed two medical essays, one by Dr. John Kearsley and the other, "Medicina Britannica," by Dr. Thomas Short.

In 1754 he wrote and printed a paper entitled "Some Account of the Pennsylvania Hospital—from its First Rise, the Beginning of the Fifth Month, called May, 1754," and which was circulated for the purpose of procuring subscriptions for the hospital.

SWIMMING AND BATHING.

Referring to his first visit to London when he worked there as a young apprentice, Franklin writes:

"At Watt's printing house I contracted an acquaintance with an ingenious young man, one Wygate, who, having wealthy relations, had been better educated than most printers; was a tolerable Latinist, spoke French, and loved reading. I taught him and a friend of his to swim at twice going into the river, and they soon became good swimmers. They introduced me to some gentlemen from the country, who went to Chelsea by water to see the College and Don Saltero's curiosities. In our return, at the request of the company, whose curiosity Wygate had excited, I stripped and leaped into the river, and swam from near Chelsea to Blackfryar's, performing on the way many feats of activity, both upon and under

the water, that surprised and pleased those to whom they were novelties.

"I had from a child ever delighted with this exercise, had studied and practised all Thevenot's motions and positions, added some of my own, aiming at the graceful and easy as well as the useful. All these I took this occasion of exhibiting to the company, and was much flattered by their admiration; and Wygate, who was desirous of becoming a master, grew more and more attached to me on that account, as well as from the similarity of our studies. He at length proposed to me traveling all over Europe together, supporting ourselves everywhere by working at our business. I was once inclined to it; but, mentioning it to my good friend, Mr. Denham, with whom I often spent an hour when I had leisure, he dissuaded me from it, advising me to think only of returning to Pennsylvania, which he was now about to do.

"On one of these days, I was, to my surprise, sent for by a great man I knew only by name, a Sir William Wyndham, and I waited upon him. He had heard by some means or other of my swimming from Chelsea to Blackfriar's, and of my teaching Wygate and another young man to swim in a few hours. He had two sons, about to set out on their travels; he wished to have them taught swimming, and proposed to gratify me handsomely if I would teach them. They were not yet come to town, and my stay was uncertain, so I could not undertake it; but from this incident I thought it likely that, if I were to remain in England and open a swimming school, I might get a good deal of money; and it struck me so strongly, that, had the overture been made sooner, probably I should not so soon have returned to America. After many years, you and I had something of more importance to do with one of these sons of Sir William Wyndham, become Earl of Egremont, which I shall mention in its place."

In a most interesting letter to Dubourg written in 1773, Franklin discusses swimming, advocating it warmly, and expressing the opinion that it has the effect of "stopping diarrhea."

"The specific gravity of some human bodies, in comparison to that of water, had been examined by Mr. Robinson, in our *Philosophical Transactions*, Volume L, page 30, for the

year 1757. He asserts, that fat persons with small bones float most easily upon the water.

"The diving-bell is accurately described in our *Transactions*. When I was a boy, I made two oval palettes, each about ten inches long and six broad, with a hole for the thumb, in order to retain it fast in the palm of my hand. They much resembled a painter's palette. In swimming I pushed the edges of these forward, and I struck the water with their flat surfaces as I drew them back. I remember I swam faster by means of these palettes, but they fatigued my wrists. I also fitted to the soles of my feet a kind of sandal; but I was not satisfied with them, because I observed that the stroke is partly given by the inside of the feet and the ankles, and not entirely with the soles of the feet.

"We have here waistcoats for swimming, which are made of double sail-cloth, with small pieces of cork quilted in between them.

"I know nothing of the scaphandre of M. de la Chapelle.

"I know by experience that it is a great comfort to a swimmer, who has a considerable distance to go, to turn himself sometimes on his back, and to vary in other respects the means of procuring a progressive motion.

"When he is seized with the cramp in the leg, the method of driving it away is, to give the parts affected a sudden, vigorous, and violent shock, which he may do in the air as he swims on his back.

"During the great heats of summer there is no danger in bathing, however warm we may be, in rivers which have been thoroughly warmed by the sun. But to throw one's self into cold water, when the body has been heated by exercise in the sun, is an imprudence which may prove fatal. I once knew an instance of four young men, who, having worked at harvest in the heat of the day, with a view of refreshing themselves plunged into a spring of cold water; two died upon the spot, a third in the morning, and the fourth recovered with great difficulty. A copious draught of cold water, in similar circumstances, is frequently attended with the same effect in North America.

"The exercise of swimming is one of the most healthy and agreeable in the world. After having swam for an hour or two in the evening, one sleeps coolly the whole night, even during

the most ardent heat of summer. Perhaps, the pores being cleansed, the insensible perspiration increases and occasions this coolness. It is certain that much swimming is the means of stopping a diarrhea, and even of producing a constipation. With respect to those who do not know how to swim or who are affected with a diarrhea at a season which does not permit them to use that exercise, a warm bath, by cleansing and purifying the skin, is found very salutary, and often effects a radical cure. I speak from my own experience, frequently repeated, and that of others, to whom I have recommended this."

In a letter to Oliver Neave which is rather too long to reproduce, Franklin urges that it is not too late in life for his friend to learn to swim; and then, in considerable detail he lays down rules for beginners in the art of swimming which would be of the greatest practical value were they, without alteration, posted up in swimming schools to-day.

Franklin argues on several occasions that in the case of scarcity of drinking water at sea, that the suffering from thirst may be in some measure relieved by immersing the body in water for some considerable period. In a letter to a young lady, 1769, he remarks:

"I take this Opportunity to send you, also, a late Paper, containing a melancholy Account of the Distresses of some Seamen. You will observe in it the Advantages they receiv'd from wearing their Clothes constantly wet with salt Water, under the total Want of fresh Water to drink. You may remember I recommended this Practice many years ago."

THE VALUE OF FRESH AIR AND PROPER VENTILATION.

The Nature and Contagiousness of "Colds."

Franklin was deeply impressed with the value of fresh air, at a time when it was far too much excluded from dwelling houses, hospitals, and other public buildings. He thought upon and investigated the subject much and wrote upon it repeatedly. He devised and described the "Pennsylvania fire-place" which was intended to heat a room equally and secure an even temperature in it. Lord Kaimes, addressing him as a "universal smoke doctor," asked his advice as to the ventilation of his new house in Edinburgh. He was consulted as to the best methods of ventilation for the House of Commons; and

several medical friends asked for suggestions for the ventilation of hospitals. Franklin often twitted his doctor friends on their fear of fresh air, or their tardy recognition of its value. The present open air treatment of tuberculosis patients may be fairly said to be nothing more than a concrete application of the principles for which Franklin stood. Franklin would not allow that fresh air was bad even when damp. Parton remarks:

"He was among the first who called attention to the cruel folly of excluding fresh air from hospitals and sick rooms, particularly those of fever patients. Unquestionably he was the originator of the modern art of ventilation. He cleared the pure air of heaven from calumnious imputation, and threw open the windows to mankind."

In his investigations of the value of fresh air, Franklin gave much consideration to the subject of "colds," "catching colds," etc., and as will be presently seen, he set forth plainly and fully the modern theory of "colds" and the conditions under which they are contagious; and not until one hundred and fifty years later did these views of Franklin become those of the medical profession. They are now accepted everywhere.

Franklin's investigations in the subject of ventilation naturally led him to the careful consideration of and experiments upon chimneys. Smyth remarks:

"Before the time of Franklin's invention, smoky chimneys were among the commonest annoyances of domestic life. A smoky house is mentioned by Shakespeare in the category of tedious things with a tired horse and a railing wife. 'How may a smoky chimney be best cured?' was one of Franklin's queries for the Junto. 'It is strange methinks,' he remarked, 'that though chimneys have been for so long in use, the construction should be so little understood, till lately, that no workman pretended to make one which should always carry off all smoke.'"

The result of Franklin's studies was the invention of the "Pensylvania fire-place," in 1742. Upon this subject he wrote a remarkable essay containing as it does many observations on physics, hygiene, ventilation, and public health. Several passages germane to this study will bear quoting.

While recognizing the improvement which had been made in the construction of chimneys by which the smoke had been eliminated, he observed that they are still quite objectionable

because of the strong drafts at every crevice; and he goes on to say:

"Many colds are caught from this cause only; it being safer to sit in the open street, for then the Pores do all close together, and the Air does not strike so sharply against any particular Part. The Spaniards have a Proverbial Saying,

" 'If the Wind blows on you thro' a Hole,
Make your Will, and take care of your Soul.' "

Women particularly from this Cause, (as they sit much in the House) get Colds in the Head, Rheums, and Defluxions, which fall into their Jaws and Gums, and have destroyed early many a fine set of teeth in these Northern Colonies. Great and bright Fires do also very much contribute to damage the Eyes, dry and shrivel the Skin, and bring on early Appearances of Old-Age. In short, many of the Diseases proceeding from Colds, as Fevers, Pleurisies, etc., fatal to very great Numbers of people, may be ascribed to strongdrawing Chimneys, whereby, in severe Weather, a man is scorched before, while he's froze behind."

Continuing his argument for the advantages of the Pennsylvania fire-place devised by him, he makes the following observations: "That warm rooms make people tender and apt to catch cold, is a mistake as great as it is (among the *English*) general. We have seen in the preceding Pages how the common Rooms are apt to give Colds; but the writer of this Paper may affirm, from his own Experience, and that of his Family and Friends who have used warm Rooms, people are rendered *less liable* to take Cold, and indeed, *actually hardened*. If sitting warm in a Room made One subject to take cold on going out, lying warm in Bed should, by a Parity of Reason, produce the same effect when we rise. Yet we find we can leap out of the warmest Bed naked in the coldest morning, without any Danger; and in the same Manner out of warm Clothes into a cold bed. The Reason is, that in these Cases the Pores all close at once, the Cold is shut out, and the Heat within augmented, as we soon after feel by the glowing of the flesh and skin. Thus no one was ever known to catch Cold by the use of the cold Bath: And are not cold Baths allowed to harden the Bodies of those that use them? Are they not therefore frequently prescribed to the tenderest Constitutions? Now, every Time you go out of a warm Room into a Cold Bath, and the effect is in proportion the same; for (tho' perhaps you may feel somewhat chilly at first)

you find in a little Time your Bodies hardened and strengthened, your Blood is driven with a brisker Circulation, and a Comfortable, steady, uniform inward Warmth succeeds that equal outward Warmth you first received in the room. Farther to confirm this Assertion, we instance the *Swedes*, the *Danes*, the Russians; these Nations are said to live in Rooms, compared to ours, as hot as ovens; yet where are the hardy Soldiers, tho' bred in their boasted cool Houses, that can, like these People, bear the Fatigues of a Winter Campaign in so severe a Climate, march whole Days to the Neck in snow, and at Night entrench in Ice, as they do?" He sums up the advantages of the Pennsylvania fire-place under fifteen heads, of which the following are quoted:

"If you sit near the Fire, you have not that cold draft of uncomfortable Air nipping your Back and Heels, as when before common Fires, by which many catch Cold, being scorcht before, and as it were, froze behind.

"If you sit against a Crevice, there is not that sharp Draught of cold Air playing on you, as in Rooms where there are Fires Coughs, Catarrhs, Tooth-aches, Fevers, Pleurisies, and many other Diseases.

"In Case of Sickness, they make most excellent Nursing-rooms; as they constantly supply a sufficiency of fresh air, so warmed at the same time as to be no way inconvenient or dangerous. A small One does well in a Chamber; and, the Chimney being fitted for it, it may be removed from one room to another, as Occasion requires, and fixed in half an Hour. The equal temper, too, and Warmth, of the Air of the Room, is thought to be particularly advantageous in some Distempers: For 'twas observed in the Winters of 1730 and 1736, when the small-pox spread in *Pennsylvania*, that very few of the Children of the Germans died of that Distemper in proportion to those of the *English*; which was ascribed by some to the warmth and equal Temper of Air in their Stove-Rooms; which made the Disease as favorable as it commonly is in the *West Indies*. But this Conjecture we submit to the judgment of Physicians."

Writing on "The Causes and Cures of Smoky Chimneys," Franklin discusses, in some detail, the subject of ventilation, dampness, fresh air, colds, etc. "Some are as much afraid of fresh Air as persons in the Hydrophobia are of fresh water. I myself had formerly this prejudice, this Aerophobia, as I now

account it; and, dreading the supposed dangerous Effects of cool Air, I considered it as an Enemy, and closed with extreme care every Crevice in the Rooms I inhabited.

“Experience has convinced me of my Error. I now look upon fresh Air as a friend; I even sleep with an open Window. I am persuaded, that no common Air from without is so unwholesome, as the Air within a close Room, that has been often breath’d and not changed. Moist Air, too, which formerly I thought pernicious, gives me no Apprehensions; for considering that no Dampness of Air apply’d to the Outside of my Skin can equal to what is apply’d to and touches it within, my whole Body being full of Moisture, and finding that I can lie two hours in a Bath twice a Week, covered with Water, which certainly is much damper than any Air can be, and this for Years together, without catching Cold, or being in any other manner disordered by it, I no longer dread mere Moisture, either in Air or in Sheets or Shirts: And I find it of no Importance to the Happiness of Life, the being freed from vain Terrors, especially of objects that we are every day exposed inevitably to meet with. You Physicians have of late happily discovered, after a contrary Opinion had prevail’d some Ages, that fresh and cool Air does good to Persons in the Small-Pox and other Fevers. It is to be hoped that in another Century or two we may all find out, that it is not bad even for People in Health. And as to Moist Air, here I am at this present Writing in a Ship with above 40 Persons, who have had no other but moist Air to breathe for 6 Weeks past; every thing we touch is damp, and nothing dries, yet we are all as healthy as we should be on the mountains of Switzerland, whose Inhabitants are not more than those of Bermuda or St. Helena Islands. Islands on whose Rocks the Waves are dashed into Millions of Particles which fill the Air with Damp, but produce no Distemper, the Moisture being pure, unmixed with the poisonous Vapours arising from Marshes and stagnant Pools, in which many Insects die and corrupt the Water. These Places only, in my Opinion (which however I submit to yours), afford unwholesome Air; and that it is not the mere Water contained in Damp Air, but the volatile Particles of corrupted animal Matter mixed with that Water, which renders such Air Pernicious to those who breathe it. And I imagine it a Cause of the same kind that renders the Air in close Rooms, where the perspirable Matter is breathed over and over

again by a number of assembled People, so hurtful to Health. After being in such a Situation, many find themselves affected by that *Febricula*, which the English alone call a *Cold*, and perhaps from the Name, imagine that they caught the malady by going out of the Room, when it was in fact by being in it."

Franklin's study of the subject of ventilation led him to make a number of interesting experiments, one of which is thus noted by Dr. Small, an English surgeon:

"The doctor confirmed this by this following experiment: He breathed gently through a tube into a deep glass mug, so as to impregnate all the air in the mug with this quality. He then put a lighted *bougie* into the mug, and upon touching the air therein the flame was instantly extinguished; by frequently repeating the operation, the *bougie* gradually preserved its light longer in the mug, so as in a short time to retain it to the bottom of it, the air having totally lost the bad quality it had contracted from the breath blown into it."

As has been remarked before, Franklin was on terms of intimate friendship with Joseph Priestley and they exchanged many letters and held many conferences together. Priestley performed some very interesting experiments, causing plants to grow in air which had become vitiated from human expiration. In a letter to Franklin, Priestley informs him of the very flourishing state of plants growing in this vitiated atmosphere. Replying to this letter Franklin writes:

"That the vegetable creation should restore the air which is spoiled by the animal part of it, looks like a rational system and seems to be a piece with the rest. Thus fire purifies water all the world over. It purifies it by distillation when it raises it in vapors and lets it fall in rain; and further still by filtration when, keeping it fluid, it suffers that rain to percolate the earth. We knew before that putrid animal substances were converted into sweet vegetables when mixed with the earth and applied as manure; and now it seems that the same putrid substances, mixed with the air, have a similar effect. The strong thriving state of your mint, in the putrid air, seems to show that the air is mended by taking something from it and not by adding to it. I hope this will give some check to the rage of destroying trees that grow near houses, which has accompanied our late improvements in gardening, from an opinion of their being unwholesome. I am certain, from long observation, that there is nothing unhealthy

in the air of the woods, and no people on earth enjoy better health or are more prolific."

Writing from London on July 28, 1768, to Dr. Dubourg, Franklin describes what he calls a fresh air bath.

"I greatly approve the epithet which you give, in your letter of the 8th of June, to the method of treating the small-pox, which you call the tonic or bracing method; I will take occasion from it to mention a practice to which I have accustomed myself. You know the cold bath has long been in vogue here as a tonic; but the shock of the cold water has always appeared to me, generally speaking, as too violent, and I have found it much more agreeable to my constitution to bathe in another element, I mean cold air. With this view I rise almost every morning and sit in my chamber without any clothes whatever, half an hour or an hour, according to the season, either reading or writing. This practice is not in the least painful but, on the contrary, agreeable; and if I return to bed afterwards before I dress myself, as sometimes happens, I make a supplement to my night's rest of one or two hours of the most pleasing sleep that can be imagined. I find no ill consequences whatever resulting from it and that at least it does not injure my health, if it does not in fact contribute much to its preservation. I shall therefore call it for the future a *bracing* or *tonic* bath."

In a letter to Dr. Hawkesworth, dated London, May 8, 1772, Franklin writes of Prisetley's experiments with Fix'd Air:

"Dr. Priestley discovered that two-fourths of the air, one produced by suffering dead mice to putrefy under glass, the other by the effervescence of chalk and water with a small quantity of acid or vitriol, in either of which living mice being put would instantly die, yet the two being mixed both become good common air, and mice breathe in it freely. From his own and Dr. McBride's Experiments (who thought Fix'd Air would prevent or cure the sea scurvy) he was persuaded it might be of use in mortification. But of this there has been only a single experiment. A Physician of his acquaintance at Leeds wrote to him while he was lately in town that a person dying as was thought of a putrid fever with all the symptoms of a mortification in the bowels had been suddenly relieved and recovered by the injection of Fix'd Air as a clyster. These are all our present premises upon which you can judge as well as I how far one may expect the same Fix'd Air will be of service to a cancer, but, as you

ask my opinion, as the case might be desperate and we know of no danger in the trial, I should be for trying it. I would first syringe the sore strongly with warm water impregnated with Fix'd Air so as to cleanse well the part. Then I would apply to it a succession of glasses filled with Fix'd Air, each glass to remain till the sore had absorbed the Fix'd Air contained in it. It would require a long description to explain the readiest methods of obtaining the air, applying it, and impregnating the water with it, and perhaps I would not make myself clearly understood."

In a letter to Jean Baptiste Le Roy, dated June 22, 1773, Franklin writes of his favorite subject, fresh air, as follows:

"I am pleased to hear you are engaged in the Consideration of Hospitals. I wish any Observations of mine could be of Use to you, they should be at your Service. But 'tis a Subject I am very little acquainted with. I can only say, that, if a free & copious Perspiration is of Use in Diseases, that seems, from the Experiments I mentioned to M. Dubourg, to be best obtained by light covering & fresh Air continually changing: The Moisture on the Skin when the Body is warmly covered, being a Deception and the Effect not of greater Transpiration, but of the Saturation of the Air included under the & in the Bed-clothes, which therefore can absorb no more, and so leaves it on the Body. From those Experiments I am convinced of what I indeed before suspected, that the Opinion of Perspiration being checked by Cold is an error, as well as that of Rheum being occasioned by Cold. But as this is Heresy here, and perhaps may be so with you, I only whisper it, and expect you will keep my Secret. Our Physicians have begun to discover that fresh Air is good for People in the Small-Pox and other Fevers, I hope they will find out that it does no harm to People in Health."

Two weeks later, writing to his old friend, Dubourg, he says:

"I have not time now to write what I intend upon the Cause of Colds, or Rheums, and my Opinions on that Head are so singular here, that I am almost afraid to hazard them abroad. In the meantime, be so kind as to tell me at your leisure, whether in France you have a general Belief that moist Air, and damp Shirts or Sheets, and wet Floors and Beds that have not lately been used, and Clothes that have not lately been worn, and going out of a warm Room into the Air, and leaving off a

long-worn waistcoat, and wearing leaky Shoes, and sitting near an open Window, or Door, or in a Coach with both Glasses down, are all or any of them capable of giving the Distemper we call a Cold, and you a *Rheum* or *Catarrh*? Or are these merely *English* ideas?"

In another letter to Dr. Dubourg, Franklin offers some observations on the subject of perspiration, damp clothes, etc.

"I shall not attempt to explain why damp clothes occasion colds, rather than wet ones, because I doubt the fact; I imagine that neither the one nor the other contribute to this effect, and that the cause of colds are totally independent of wet and even cold. I propose writing a short paper on this subject the first moment of leisure I have at my disposal. In the mean time, I can only say that, having some suspicions that the common notion, which attributes to colds the property of stopping the pores and obstructing perspiration, was ill founded, I engaged a young physician, who is making some experiments with Sanctorius's balance, to estimate the different proportions of his perspiration, when remaining one hour naked, and another warmly clothed. He pursued the experiment in this alternate manner for eight hours successively and found his perspiration almost doubled during those hours in which he was naked."

Franklin's view of "colds" and their contagiousness and the advantage of fresh air are perhaps best set forth in a letter to Dr. Benjamin Rush, which he wrote from London June 14, 1773.

"I shall communicate your judicious remark, relating to the septic quality of the air transpired by patients in putrid diseases, to my friend, Dr. Priestley. I hope that after having discovered the benefit of fresh and cool air applied to the sick, people will begin to suspect that possibly it may do no harm to the well. I have not seen Dr. Cullen's book, but am glad to hear that he speaks of catarrhs or colds by contagion. I have long been satisfied from observation, that besides the general colds now termed influenza (which may possibly spread by contagion, as well as by a particular quality of the air), people often catch cold from one another when shut up together in close rooms, coaches, &c., and when sitting near and conversing so as to breathe in each other's transpiration; the disorder being in a certain state. I think too, that it is the frouzy, corrupt air from animal substances, and the perspired matter from our bodies, which being long confined in beds not lately used, and clothes

not lately worn, and books long shut up in close rooms, obtains that kind of putridity, which occasions the colds observed upon sleeping in, wearing, and turning over such bedclothes, or books, and not their coldness or dampness. From these causes, but more from too full living, with too little exercise, proceed in my opinion most of the disorders, which for one hundred and fifty years past the English have called *colds*.

“As to Dr. Cullen’s cold or catarrh *a frigore*, I question whether such an one ever existed. Traveling in our severe winters, I have suffered cold sometimes to an extremity only short of freezing, but this did not make me *catch cold*. And, for moisture, I have been in the river two or three hours for a fortnight together, when one would suppose I might imbibe enough of it to *take cold* if humidity could give it; but no such effect ever followed. Boys never get cold by swimming. Nor are people at sea, or who live at Bermuda or St. Helena, small islands where the air must be moist from the dashing and breaking of waves against their rocks on all sides, more subject to colds than those who inhabit part of a continent where the air is driest. Dampness may indeed assist in producing putridity and those miasmata which infect us with the disorder we call a cold; but of itself can never by a little addition of moisture hurt a body filled with watery fluids from head to foot.”

Writing to Thomas Percival, London, September 25, 1773, Franklin argues that “moist seasons” are healthiest, and again clearly sets forth his ideas as to the contagiousness of colds.

“’Tis a curious Remark that moist Seasons are the healthiest. The Gentry of England are remarkably afraid of Moisture, and of Air. But Seamen, who live in perpetually moist Air, are always Healthy, if they have good Provisions. The Inhabitants of Bermuda, St. Helena, and other Islands far from Continents, surrounded with Rocks against which the Waves continually dashing fill the Air with Spray & Vapour, and where no Wind can arrive that does not pass over much Sea, and of course bring much Moisture, these People are remarkably healthy. And I have long thought that mere moist Air has no ill effect on the Constitution; tho’ Air impregnated with Vapour from putrid Marshes is found pernicious, not from the Moisture, but the Putridity. It seems strange

that a Man whose Body is composed in great Part of Moist Fluids, whose Blood and Juices are so watery, who can swallow Quantities of Water and Small Beer daily without Inconvenience, should fancy that a little more or less Moisture in the Air should be of such Importance. But we abound in Absurity and Inconsistency.

"Thus tho' it is generally allowed that *taking the Air* is a good Thing, yet what Caution against Air, what stopping of Crevices, what wrapping up in warm Clothes, what shutting of Doors and Windows! even in the midst of Summer! Many London Families go out once a day to take the Air; three or four Persons in a Coach, one perhaps sick; these go three or four Miles, or as many Turns in Hide Park, with the Glasses both up close, all breathing over & over again the same Air they brought out of town with them in the Coach with the least change possible, and rendered worse and worse every moment. And this they call *taking the Air*. From many Year's Observations on myself and others, I am persuaded we are on a wrong scent in supposing Moist or cold Air, the Cause of that Disorder we call *a Cold*. Some unknown Quality in the Air may perhaps produce colds, as in the influenza; but generally I apprehend they are the effect of too full Living in proportion to our Exercise."

Franklin's views on fresh air brought him on one occasion in active conflict with John Adams when the two were compelled to bunk together, in 1776. Adams, in his autobiography says:

"At Brunswick, but one bed could be procured for Dr. Franklin and me, in a chamber little larger than the bed, without a chimney, and with only one small window. The window was open, and I who was an invalid and afraid of the air of night, shut it close. 'Oh!' says Franklin, 'don't shut the window, we shall be suffocated.' I answered I was afraid of the evening air. Dr. Franklin replied, 'The air within this chamber will soon be, and indeed is now, worse than that without doors. Come, open the window and come to bed, and I will convince you. I believe you are not acquainted with my theory of colds?' Opening the window, and leaping into bed, I said I had read his letters to Dr. Cooper, in which he had advanced, that nobody ever got cold by going into a cold church or any other cold air, but the theory was so

little consistent with my experience, that I thought it a paradox. However, I had so much curiosity to hear his reasons that I would run the risk of a cold. The Dr. then began a harangue upon air and cold, and respiration and perspiration, with which I was so much amused that I soon fell asleep, and left him and his philosophy together, but I believe they were equally sound and insensible within a few minutes after me, for the last words I heard were pronounced as he was more than half asleep. I remember little of the lecture, except that the human body, by respiration and perspiration, destroy a gallon of air in a minute; that two such persons as were now in that chamber, would consume all the air in it in an hour or two; that by breathing over again the matter thrown off by the lungs and the skin, we should imbibe the real cause of colds, not from abroad, but from within."

ANATOMY AND PHYSIOLOGY.

In two letters to his friend, Dr. Cadwallader Colden, written in 1745, Franklin discusses the subject of absorption, perspiration, and circulation, at considerable length and after a most interesting fashion.

"I am extremely pleased with your doctrine of the *absorbent vessels* intermixed with the perspiratory ducts, both on the external and internal superficies of the body. After I had read Sanctorius, I imagined a constant stream of the perspirable matter issuing at *every* pore in the skin. But then I was puzzled to account for the effects of mercurial unctions for the strangury, sometimes occasioned by an outward application of the flies, and the like; since whatever virtue or quality might be in a medicine laid upon the skin, if it would enter the body, it must go against wind and tide, as one may say. Dr. Hales helped me a little, when he informed me, in his *Vegetable Statics*, that the body is not always in a perspirable, but sometimes in an *imbibing state*, as he expresses it, and will at times actually grow heavier by being exposed to moist air. But this did not quite remove my difficulty; since, as these fits of imbibing did not appear to be regular or frequent, a blistering plaster might lie on the body a week, or a mercurial ungent be used a month, to no purpose, if the body should so long continue in a perspirable state. Your doctrine, which was quite new to me makes all easy; since the body may

perspire, and absorb at the same time, through the different ducts destined to those different ends.

"I must own, however, that I have one objection to the explanation you give of the operation of these absorbents. That they should communicate with the veins, and the perspirants with the arteries only, seems natural enough; but, as all fluids by the hydrostatical law pass equally in all directions, I question whether the *mere direction* of one of those minute vessels, where it joins with the vein or artery, *with* or *against* the stream of blood in the larger vessel, would be sufficient to produce such contrary effects as *perspiring* and *absorbing*. If it would, perspirants and absorbents might proceed from the arteries only, or from the veins only, or from both indifferently; as, by the figure in the margin (Fig. 1) whether the vessel a b is an artery or a vein, if the stream moves from a to b, the minute communicating vessel c shall be a perspirant, and d an absorbent; and the contrary, if it moves from b to a. Yet I can not say I am certain the mere direction of the vessel will have no effect; I only suspect it, and am making a little machine to try an experiment with for satisfaction.

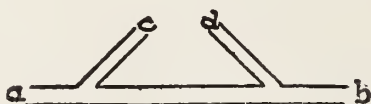


FIG. 1.

"It is a siphon made of two large joints of Carolina cane united at e, into which two small glass tubes, f and g, are to be inserted, one on the descending, and the other on the ascending side. (See Fig. 2.) I propose to fill the siphon

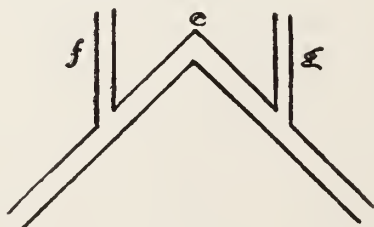


FIG. 2.

and the two glass tubes with water, and, when it is playing, unstop at the same instant the tops of both glass tubes, observing in which the water sinks fastest. You shall know

the success. I conceive the pressure of the atmosphere on the apertures of the two glass tubes to be no way different from the pressure of the same on the mouths of the perspirants and absorbents, and if the water sinks equally in the tubes, notwithstanding the direction of one against the other with the stream, I shall be ready to think we must look out for another solution. You will say, perhaps, that it will then be time enough when the experiment is tried, and succeeds as I suspect, yet I can not forbear attempting at one beforehand, while some thoughts are present in my mind. If a new solution should be found necessary, this may be ready for consideration.

“I do not remember, that any antagonist, that has fallen in my way, has assigned any other cause of the motion of the blood through its whole circle, than the contractile force of the heart, by which that fluid is driven with violence into the arteries, and so continually propelled by repetitions of the same force, till it arrives at the heart again. May we for our present purpose suppose another cause producing half the effect, and say that the ventricles of the heart, like syringes, *draw*, when they dilate, as well as force when they contract? That this is not unlikely, may be judged from the valves nature has placed in the arteries, to prevent the drawing back of the blood in those vessels when the heart dilates, while no such obstacles prevent its sucking (to use the vulgar expression) from the veins. If this be allowed, and the insertion of the absorbents into the veins and of the perspirants into the arteries be agreed to, it will be of no importance in what direction they are inserted. For, as the branches of the arteries are continually lessening in their diameters, and the motion of the blood decreasing by means of the increased resistance, there must, as more is constantly pressed on behind, arise a kind of *crowding* in the extremities of those vessels, which will naturally *force out* what is contained in the perspirants that communicate with them. This lessens the quality of blood, so that the heart can not receive again by the veins all it had discharged into the arteries, which occasions it to draw strongly upon the absorbents that communicate with them. And thus the body is continually perspiring and imbibing. Hence after long fasting the body is more liable to receive infection from bad air, and food, before

it is sufficiently chyli-fied, is drawn crude into the blood by absorbents that open into the bowels.

"To confirm this position, that the heart *draws*, as well as *drives* the blood, let me add this particular. If you sit or lean long, in such a manner as to compress the principle artery that supplies a limb with blood, so that it does not furnish a due quantity, you will be sensible of a pricking pain in the extremities like that of a thousand needles; and the veins, which used to raise your skin in ridges, will be (with the skin) sunk into channels; the blood being drawn out of them, and their sides pressed so closely together that it is with difficulty and slowly that the blood afterwards enters them, when the compressed artery is relieved. If the blood was not drawn by the heart, the compression of an artery would not empty a vein, and I conjecture that the pricking pain is occasioned by the sides of the small vessels being pressed together.

"If there is no contrivance in the frame of the auricles or ventricles of the heart, by which they dilate themselves, I can not conceive how they are dilated. It is said, by the force of the venal blood rushing into them. But if that blood has no force which was not first given to it by the contraction of the heart, how can it (diminished as it must be by the resisting friction of the vessels it has passed through) be strong enough to overcome that contraction? Your doctrine of fermentation in the capillaries helps me a little; for if the returning blood be rarefied by the fermentation, its motion must be increased; but as it seems to me that it must by its expansion resist the arterial blood behind it, as much as it accelerates the venal blood before it, I am still somewhat unsatisfied. I have heard or read somewhere, too, that the hearts of some animals continue to contract and dilate, or to beat, as it is commonly expressed, after they are separated from the other vessels, and taken out of the body. If this be true, their dilation is not caused by the force of the returning blood.

"I should be glad to satisfy myself, too, whether the blood is always quicker in motion, when the pulse beats quicker. Perhaps more blood is driven forward by one strong, deep stroke, than by two that are weak and light; as a man may breathe more by one long common respiration, when in health, than by two quick, short ones in a fever. I applied the siphon

I mentioned to you in a former letter to a pipe of a water-engine. E is the engine; a, its pipe, bbb, the siphon; c and d, the two glass pipes communicating with the siphon (Fig. 3). Upon working the engine, the water flowed through the siphon, and the glass tube c; but none was discharged through d. When I stopped with my finger the end of the siphon, the water issued at both glass tubes, with equal force, and on only half stopping the end of the siphon, it did the same. I imagine the sudden bending of the siphon gives such a resistance to the stream, as to occasion its issuing out of the glass tube c. But I intend to try a further experiment, of which I shall give you an account."

In another piece, of unknown date, under the title of "A Conjecture As To The Cause Of The Heat Of The Blood In Health, And Of The Cold And Hot Fits Of Some Fevers," Franklin continues his discussion of the subject of anatomy and physiology:

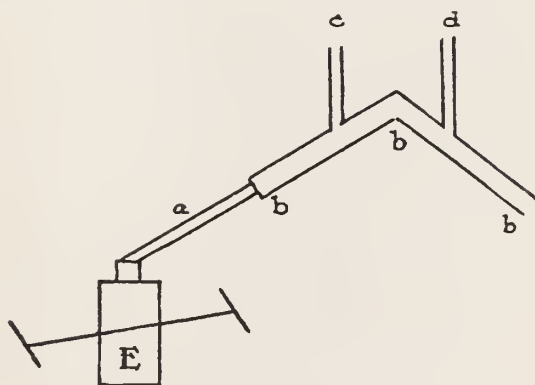


FIG. 3.

"The parts of fluids are so smooth, and roll among one another with so little friction, that they will not by any (mechanical) agitation grow warmer. A phial half full of water shook with violence and long continued, the water neither heats itself nor warms the phial. Therefore the blood does not acquire its heat either from the motion and friction of its own parts, or its friction against the sides of its vessels.

"But the parts of solids, by reason of their closer adhesions can not move among themselves without friction, and that produces heat. Thus, bend a plummet to and fro, and, in the place of bending, it shall soon grow hot. Friction on any part

of our flesh heats it. Clapping of the hands warms them. Exercise warms the whole body.

"The heart is a thick muscle, continually contracting and dilating near eighty times a minute. By this motion there must be a constant interfriction of its constituent solid parts. That friction must produce a heat, and that heat must consequently be continually communicated to the perfuent blood.

"To this may be added, that every propulsion of the blood by the contraction of the heart, distends the arteries, which contract again in the intermission and this distension and contraction of the arteries may occasion heat in them, which they likewise communicate to the blood that flows through them.

"That these causes of the heat of the blood are sufficient to produce the effect, may appear probable, if we consider that a fluid once warm requires no more heat to be applied to it in any part of time to keep it warm, than what it shall lose in an equal part of time. A smaller force will keep a pendulum going, than what first set it in motion.

"The blood, thus warmed in the heart, carries warmth with it to the very extremities of the body, and communicates it to them; but as by this means its heat is gradually diminished, it is returned again to the heart by the veins for a fresh calefaction.

"The blood communicates its heat, not only to the solids of our body, but to our clothes, and to a portion of the circumambient air. Every breath, though drawn in cold, is expired warm; and every particle of the *materia perspirabilis* carries off with it a portion of heat.

"While the blood retains a due fluidity, it passes freely through the minutest vessels, and communicates a proper warmth to the extremities of the body. But when by any means it becomes viscid, as not to be capable of passing those minute vessels, the extremities, as the blood can bring no more heat to them, grow cold.

"The same viscosity in the blood and juices checks or stops the perspiration, by clogging the perspiratory ducts, or, perhaps, by not admitting the perspirable parts to separate. Paper wet with size and water will not dry so soon as if wet with water only.

"A vessel of hot water, if the vapor can freely pass from it, soon cools. If there be just fire enough under it to add continually the heat it loses, it retains the same degree. If

the vessel be closed so that the heat may be retained, there will from the same fire be a continual accession of heat to the water, till it rises to a great degree. Or, if no fire be under it, it will retain the heat it first had for a long time. I have experienced, that a bottle of hot water stopped, and put in my bed at night, has retained so much heat seven or eight hours, that I could not in the morning bear my foot against it, without some of the bedclothes intervening.

"During the cold fit, then, perspiration being stopped, a great part of the heat of the blood, that used to be dissipated, is confined and retained in the body; the heart continues its motion, and creates a constant accession to that heat; the inward parts grow very hot, and, by contact with the extremities, communicate that heat to them. The glue of the blood is by this heat dissolved, and the blood afterwards flows freely, as before the disorder."

On one occasion he wrote to his friend, Dr. Ingenhouz: "To inquisitive minds like yours and mine the reflection that the quantity of human knowledge bears no proportion to the quantity of human ignorance must be in one view rather pleasing, *viz.*, that though we are to live forever we may be continually amused and delighted with learning something new." He discussed with Dubourg the question of life and death. He related to his friend that on one occasion he had received a bottle of Madeira from America; and that upon opening it three flies fell into the first glass that was filled. He goes on to say: "Having heard it remarked that drowned flies were capable of being revived by the rays of the sun, I proposed making an experiment upon these; they were therefore exposed to the sun upon a sieve which had been employed to strain them out of the wine. In less than three hours two of them began by degrees to recover life. They commenced by some convulsive motions of the thighs, and at length they raised themselves upon their legs, wiped their eyes with their forefeet, beat and brushed their wings with their hind feet, and soon after began to fly, finding themselves in Old England, without knowing how they came thither. The third continued lifeless till sunset, when, losing all hopes of him, he was thrown away."

"I wish it were possible, from this instance, to invent a method of embalming drowned persons, in such a manner that they may be recalled to life at any period, however distant;

for having a very ardent desire to see and observe the state of America a hundred years hence, I should prefer to any ordinary death, the being immersed in a cask of Maderia wine, with a few friends, till that time, to be then recalled to life by the solar warmth of my dear country."

Commenting on the above Smyth remarked: "Had his eyes opened after a century's slumber, upon what a world would their calm gaze have rested! The vast images that he saw in glimmering dawn become now the commonplaces of school boys. His daring prophecies of the possibilities of electricity more than fulfilled. A great and proud people, justifying his unfaltering faith in popular instincts and institutions, holding in grateful and perpetual memory his lifelong labours and sacrifices!"

BI-FOCAL SPECTACLES.

For the invention of the bi-focal glass we are indebted to Franklin. When Dollond, the celebrated optician, learned of Franklin's invention, he supposed that the device would be suitable only for particular eyes. Writing to Whatley on this subject Franklin observes:

"By Mr. Dollond's saying that my double spectacles can only serve particular eyes, I doubt he has not been rightly informed of their construction. I imagine it will be found pretty generally true, that the same convexity of glass through which a man sees clearest and best at the distance proper for reading is not the best for greater distances. I therefore had formerly two pair of spectacles which I shifted occasionally, as in travelling I sometimes read, and often wanted to regard the prospects. Finding this change troublesome, and not always sufficiently ready, I had the glasses cut and half of each kind associated in the same circle. By this means as I wear my spectacles constantly, I have only to move my eyes up or down, as I want to see distinctly far or near, the proper glass being always ready. This I find more particularly convenient since my being in France, the glasses that serve me best at table to see what I eat, not being the best to see the faces of those on the other side of the table who speak to me; and when one's ears are not well accustomed to the sounds of a language, a sight of the movements in the features of him that speaks helps to explain; so that I understand French better by the help of my spectacles."

A FLEXIBLE CATHETER.

The following letter, by Franklin, in the possession of Dr. F. N. Otis, of New York, on the subject of flexible catheters, is of peculiar interest for the physician:

"DEAR BROTHER: Reflecting yesterday on your desire to have a flexible catheter, a thought struck into my mind, how one might probably be made; and lest you should not readily conceive it by any description of mine, I went immediately to the silver-smith's and gave directions for making one (sitting by till it was finished) that it might be ready for this post. But now it is done I have some apprehensions that it may be too large to be easy; if so a silver-smith can easily make it less by twisting or turning it on a smaller wire, and putting a smaller pipe to the end, if the pipe is really necessary. This machine may either be covered with small fine gut, first cleaned and soaked a night in a solution of alum and salt and water, then rubbed dry, which will preserve it longer from putrefaction; then wet again and drawn on and tied to the pipes at each end, where little hollows are made for the thread to bind in and the surface greased. Or perhaps it may be used without the gut, having only a little tallow rubbed over it, to smooth it and fill the joints. I think it is as flexible as would be expected in a thing of the kind, and I imagine will readily comply with the turns of the passage, yet has stiffness enough to be protruded; if not, the enclosed wire may be used to stiffen the hinder part of the pipe while the fore part is pushed forward, and as it proceeds the wire may be gradually withdrawn. The tube is of such a nature, that when you have occasion to withdraw it its diameter will lessen, whereby it will move more easily. It is a kind of screw and may be both withdrawn and introduced by turning. Experience is necessary for the right using of all new tools or instruments, and that will perhaps suggest some improvement to this instrument as well as better direct the manner of using it."

POKE-WEED IN THE TREATMENT OF CANCER.

To Dr. Cadwallader Colden, Franklin wrote on April 23, 1752:

"I am heartily glad to hear more instances of the success of the Poke-weed, in the Cure of that horrible Evil to the human Body, a Cancer. You will deserve highly of Mankind for the Communication. But I find in Boston they are at a loss to know the right Plant, some asserting it is what they call *mechoacan*,

others other Things. In one of their late Papers it is publicly requested, that a perfect Description may be given of the Plant, its Places of Growth, etc. I have mislaid the Paper, or would send it to you. I tho't you had described it pretty fully. With great Respect and Esteem, etc.

B. FRANKLIN."

In a letter to Dr. Dubourg, dated March 27, 1773, Franklin writes:

"I apprehend that our poke-weed is what botanists term *phytolacca*. This plant bears berries as large as peas; the skin is black, but it contains a crimson juice. It is this juice, thickened by evaporation in the sun, which was employed. It caused great pain, but some persons were said to have been cured. I am not quite certain of the facts; all that I know is, that Dr. Colden had a good opinion of the remedy."

STATIC ELECTRICITY AS A REMEDY FOR THE RELIEF OF PARALYSIS.

Franklin wrote a most interesting letter to his old friend, Sir John Pringle, on this subject, from which the physician may draw several important lessons:

"SIR—In compliance with your request, I send you the following account of what I can recollect relating to the effects of electricity in paralytic cases, which have fallen under my observation.

"Some years since, when the newspapers made mention of great cures performed in *Italy* and *Germany*, by means of electricity, a number of paralytics were brought to me from different parts of Pennsylvania, and the neighboring provinces, to be electrised, which I did for them at their request. My method was, to place the patient first in a chair, on an electric stool, and draw a number of strong sparks from all parts of the affected limb or side. Then I fully charged two six gallon glass jars, each of which had about three square feet of surface coated; and I sent the united shock of these through the affected limb or limbs, repeating the stroke commonly three times each day. The first thing observed, was an immediate greater sensible warmth in the lame limbs that had received the stroke, than in the others; and the next morning the patients usually related that they had in the night felt a pricking sensation in the flesh of the paralytic limbs; and would sometimes shew a number of small red spots, which they supposed were occasioned by those

prickings. The limbs, too, were found more capable of voluntary motion and seemed to receive strength. A man, for instance, who could not the first day lift the lame hand from off his knee, would the next day raise it four or five inches, the third day higher; and on the fifth day was able, but with a feeble languid motion, to take off his hat. These appearance gave great spirits to the patients, and made them hope a perfect cure; but I do not remember that I ever saw any amendment after the fifth day; which the patients perceiving, and finding the shock pretty severe, they became discouraged, went home, and in a short time relapsed; so that I never knew any advantage from electricity in palsies that was permanent. And how far the apparent temporary advantage might arise from the exercise in the patient's journey, and coming daily to my house, or from the spirits given by the hope of success, enabling them to exert more strength in moving their limbs, I will not pretend to say.

"Perhaps some permanent advantage might have been obtained, if the electric shocks had been accompanied with proper medicine and regimen, under the direction of a skillful physician. It may be, too, that a few great strokes, as given in my method, may not be so proper as many small ones; since, by the account from *Scotland* of a case, in which two hundred shocks from a phial were given daily, it seems that a permanent cure has been made. As to any uncommon strength supposed to be in the machine used in that case, I imagine it could have no share in the effect produced; since the strength of the shock from charged glass is in proportion to the quantity of surface of glass coated; so that my shocks from those large jars must have been much greater than any that could be received from a phial held in the hand. I am, with great respect, Sir,

"Your most obedient servant,

"B. FRANKLIN."

How many physicians of the present day employing a new or novel remedy observe the caution shown by Franklin in this letter? The "spirit given by the hope of success" if recognized by physicians as well as it was by Franklin would save us from many therapeutic follies. The calm, judicious manner in which Franklin gives his account of these electric experiments might well serve as an admirable pattern for the medical essayist of to-day.

(To be Concluded.)

ON FINDING BOOKS.

BY DAVINA WATERSON,

of Baltimore, Md.



T is my good fortune to be all day just where I would be, in the company of old books, although they are all medical and in minor tones through dusty throats tell one sad story of disease.

From time to time medical friends come to take tea and I seek what I do not always find—a quick look of loving appreciation as their eyes fall on the shelves. They sometimes talk about buying an Hippocrates or a Galen, but in the same way as they would of buying suitable library furniture, whereas the book-lover grows reckless and instinctively wanders from the teatable to the shelves and isn't happy till he is touching a volume. That is the difference between a book hunter and a bibliophile and it is to the latter that the divine gift belongs of *knowing*, of feeling, when a sought volume is near, whether in a grimy back street or in the ordered stateliness of the Voynich or Quaritch book store.

Personally, even when hurrying along to some inky work I have felt compelled to return to look at the volumes piled high outside a shop and have always afterwards known I was right. One wet Saturday afternoon I was going back to the British Museum Reading Room when, by a curious feeling in the end of my nose, I felt obliged to return by a muddy, narrow alley, yet there seemed at first no books save the usual pious ones at eight or ten cents. Suddenly I saw on the floor four coverless folios among some old journals. A glance at one told me they were a first edition of Bell's "Surgery" and "The Anatomy of Expression." What was the dealer going to do with them? Well, it was Saturday night and the "porky ham sandwich" man had sent around for some wrapping paper! "The pictures aren't bad," I remarked indifferently, and would he take twenty-five cents a volume? Meanwhile I studied a copy of *The Family Keepsake* lest he should see the content in my eye. I trudged home happy, a bag of oranges under one arm and the four folios under the other.

It was just the same happy leading which made me stop at a shop where old school books could be bought or exchanged. There, among the torn, dogs-eared, scribbled-on "Primers" and "Steps" and "Paths to Knowledge" were a few old medical works, despised because they weren't "in the line"

required. Amongst them—I got it for fifty cents—was a first edition of Mead's "Medica Sacra" with the original of a fine etched portrait of him and some cuttings from contemporary newspapers.

Who would think of looking for engravings of celebrated doctors at a left-off clothes shop, where false teeth, violins, dancing shoes, teapots and a feather bed formed part of the stock? Yet they were there—fine ones—among old songs and journals, just as fine as those in Oxford Street at two and three dollars, all mine for twelve cents apiece.

The stalls in that splendid highway, Whitechapel High Street, so choc-a-bloc with poverty and misery, often give joy to the bibliophile. Trucks piled high with books, oh! such dry ones! "all a goin' at thruppence each," yet a patient turning over of the really handsome volumes may result in a first edition of Ruskin in the original parts (I have one now); and a small first edition of Locke rescued from an old bookstall for four cents.

A paper which tells of no failures savors a little of those quack nostrum pamphlets in which the only failures are the qualified doctors. Imagine buying with tremulous haste a volume of medical pamphlets because some valuable ones were alleged to be included, and imagine the hot wrath on finding that these had been abstracted! In buying second-hand books, maps, pictures and anatomical charts should always be carefully looked for. They have often been cut out to add to a collection and few of the new students in the British Museum know that the learned man next them intent on a folio may be one of those skilful detectives whose presence a woeful mean habit of stealing prints has rendered necessary. Only this month a wretched man was found to have mutilated valuable volumes three hundred years old.

Now, having admitted failure to find all that should be in a book, here is a little about extraordinary contents. There was an old gentleman at Oxford named Thorp and he had a letter from one Benjamin Franklin, about the King's gift of land in Georgia. Possibly Thorp left the letter in the book as a bookmark; anyway, it and the book kept company until 1906 and were found in a small shop off Oxford Street and bought for a trifling sum. Dr. Howard Kelly now has the letter in his library.

From an old pamphlet bought in Baltimore recently there

fluttered to the ground a prescription written by Hewson, the surgeon, for one Isaiah Cozens, which suggested Isaiah's having stomachic pains with its "Pulv. Rhu. Magn. and Aq. Menth."

Often fine old book-plates are found, also little inscriptions which give the human side. Here is one from a non-medical volume, an Elzevir Greek Testament of 1624, with the Hope-toun arms stamped on it:

"Although this book have Mr. Jo. Rosse's name in it yet it was first mine, and whither I gave it to him I do not remember; however, when I was at Hopetoun, Aug., 1672, I found it there and Mr. And. Rosse not pretending any right to it I brought it away with me.

JO. HOPE."

Query: Did he really ask "And. Rosse," or slip it in his pocket?

In one of those dainty little Pickering diamond classics which had Hugh Miller's book-plate in it was written:

"My Schools and Schoolmasters' shall be
Big-hearted men who toiled like thee
And I, so small, determine me
To learn with great Hugh Miller-ty."

Volumes needed to complete sets turn up in two different continents. Dr. Kirk, of Philadelphia, rummaging in one of the boxes outside a London store found a volume with Dr. Chapin A. Harris' name in it, and was delighted to find it completed a set of journals in the Baltimore College of Dental Surgery. Edinburgh, London and Rheims once each gave me a one of three, and a much fretted at delay in an old English farm house found a friend the joyful possessor of a complete "Secrets of the Reverend Maister Don Alexis of Piedmont," that curious old mixture of fabulous adventure and equally wonderful remedies, one part of which book had fetched thirty-five dollars in London.

Of some more "finds" and curious dealers in London I will tell some other time; but remember, the pleasure of the rich man ordering through an agent (oh, cold and bloodless transaction) can in no way be compared to that of the man who has to see a volume for days at a second-hand shop and not have cents enough to buy; who knocks the corners off his square meals and doesn't have his boots soled until, with indifferent face and dancing eyes he buys the treasure, and jostles inoffensive citizens on the pavement as he tries to read a bit of it here and there on his way home.

A REPLY TO DR. WALSH'S "THE SUPPOSED WARFARE BETWEEN MEDICAL SCIENCE AND THEOLOGY."

(Concluded.)

BY WILLIAM J. CRUIKSHANK, M.D.,

of Brooklyn, N. Y.



E come now to the consideration of that part of Dr. Walsh's answer which deals specifically with the effect which the bulls *Spondent pariter* and *Super illius specula* had upon the study of that branch of science now known as chemistry. Dr. Walsh says:¹

"Dr. Cruikshank's answer is a very interesting document, but it almost entirely evades the question originally raised. He made a number of assertions as to the history of science, which he seems to forget now. It was these assertions that I so strenuously objected to, and I am going to recall them to him. In order to make it perfectly clear just what is to be thought of these assertions, I shall place in parallel columns some comments that are founded on serious authorities in the history of medicine and other sciences. These assertions constitute the kernel of the doctor's address; all the rest of it is rhetoric, very charming in its way, but not of special interest in a historical journal. It is because of these assertions that I said there was no statement of Dr. Cruikshank that had a basis in historical truth."

Then comes the first point in the parallel column, as follows:

Assertions of Dr. Cruikshank:

Pope John XXII was especially energetic in persecuting the chemists to the full extent of the papal power, and in the year 1317 issued a bull calling on all rulers, secular and ecclesiastical, to hunt down the miscreants.

The Facts:

The bull, as I showed in my previous paper, had no such meaning. There was no persecution of chemists, or alchemists because of it, but Dr. Cruikshank makes no reference at all to this in his answer.

Now by what process of investigation and reasoning has Dr. Walsh arrived at the conclusion that "The bull had no such meaning"? And how does he elucidate that point for his readers? Let us see.

He finds in Dr. White's letter addressed to me² a statement which is not there, elaborates it, and, from his own fabrication deduces a false conclusion, which he attributes to Dr. White. Not content with this, he cunningly selects from the array of historians who have unanimously indicted the Roman Church for her crimes against humanity, a few

¹ *Med. Lib. & Hist. Journal*, Sept., 1906, p. 283.

² *Med. Lib. & Hist. Journal*, March, 1906.

who, while preoccupied in dealing with the *effect* of her despotic reign, have omitted to mention, among the many results of her policy, the document in question, and he cites them as witnesses to prove that the bull had no deterrent effect on chemical research. In this manner Dr. Walsh has surrounded the point at issue with a befogging and bewildering maze of Jesuitical negation and tergiversation. Let us see if this is not the fact:

Dr. White in his letter to me, when referring to the bull *Spondent pariter*, makes use of the following sentence. "But if you would know what, in the opinion of those who have studied the subject, was the effect of the bull upon chemical research, turn to the any of the standard historians of chemistry. I have but followed what I found their unanimous opinion."

Now what is Dr. Walsh's reply to this assertion? In order that we may the more readily examine this, let us place, side by side, Dr. White's statement and the deductions which Dr. Walsh has drawn from it.

Dr. White:

"But if you would know what in the opinion of those who have studied the subject, was the effect of the bull upon chemical research, turn to any of the standard historians of chemistry. I have but followed what I found their unanimous opinion."

Dr. Walsh:

"Then President White adds, 'I have followed what I found to be the unanimous opinion of the standard historians of chemistry.' By this Dr. White means, I suppose, that all the standard historians of chemistry declare that the bull of John XXII forbade chemical investigation."

Now if a comparison of these statements be made, the reader will observe:

(1) That the language here used by Dr. White is self-explanatory and requires no interpreter.

(2) That Dr. Walsh's interpretation is not only officious, but erroneous and misleading.

(3) That the conclusion of Dr. Walsh, that "President White says that this bull forbade chemical investigation, and that the standard historians of chemistry *unanimously* (note the word), declare that it did so." is as unwarranted and mischievous as is his interpretation.

(4) That Dr. White made no assertion as to the *language* of the bull,—what it did or did not forbid—but dealt solely with what other eminent historians had said with regard to the *pernicious effect* of that edict upon chemical research.

After this superhuman effort at interpretation and logical deduction, Dr. Walsh, as usual, comes up "amused" and smiling, with still another Jesuitical installment. He proceeds, at the expense of time and of considerable space to speak of Kopp, Hoefer, Thomsen, Ernst Von Meyer, Berthelot and other writers on the history of chemistry, but, finally, after all is said and done, to the effect, simply, *that they do not mention the bull at all*; and then tells us that because of that omission by those writers the aforesaid garbled statement which he attributes to Dr. White is erroneous. Now, even if it be true that the writers referred to by Dr. Walsh do not mention that the bull of John XXII expressly forbade chemical investigation, no unprejudiced person, reading these authorities, can help being convinced by them of the truth of Dr. White's assertion as to their opinion of the effect of John's reign on chemical research. No one, in my opinion, knows this better than does Dr. Walsh. Thus, when looked at "in the open," Dr. Walsh's handling of Dr. White's statement, unfortunately appears more ingenious than ingenuous.

As a teacher of history, he must also be aware that to take the bull *Spondent pariter* or the bull *Super illius specula* out of its historical environment,—out of its context—transfer it to the twentieth century, and cloud it with sophism, is not the best method by which to acquaint his readers with its effect upon the development of chemical science in the Middle Ages. An intelligent appreciation of the effects on the study of chemistry of such papal decrees is impossible without some authoritative knowledge of the real attitude toward science which has always been assumed by the Church of Rome. The "Dogmatic Constitution of Catholic Faith" as handed down by the Vatican Council (convoked by a bull of Pope Pius IX, June 29, 1868, and sitting from December 8, 1869, to July, 1870)³ shows beyond question that the Church of Rome has always been an enemy of science; for the doctrines there set forth are avowedly a reiteration of her past teachings; and it is these doctrines—which, according to its prospectus, the college at Fordham considers it her "primary duty" to instill into the youthful minds of her students,—that have been the

³ For a detailed account of the deliberations and conclusions of that Council, concerning the position which the Church of Rome must take, and has always taken, toward science, I beg to refer the reader to Chapter XII of a work entitled "Religion and Science" by Prof. John W. Draper.

cause of much of the superstition, injustice, persecution, fraud, political corruption, bloodshed and murder, which are truthfully charged up against the Italian papal system. From the reign of Constantine (A. D. 305 to A. D. 337), which sounded, for all time to come, the death-knell of individual thought and reason in the orthodox Christian world, to the present reigning pontiff, Pius X, a firm belief in these doctrines has been vigorously insisted upon by papal authority. For centuries, the Church,—both Catholic and Protestant—has used these absurd and borrowed dogmas as weapons in her warfare against liberty, invention, science and truth. Their dissemination has filled the world with ignorance, hypocrisy, hatred, bigotry and fear. In her promulgation and defence of these doctrines, the Roman Church has committed every crime known to man, and has practiced every cruelty which fiendish ingenuity could invent. Thus in the Middle Ages,—the environment in which Pope John XXII was born, and in which he lived for ninety years,—the Church's system of opposition to science and learning is almost inconceivable. Living, as we do, in an atmosphere of independent thought, of unrestricted scientific effort, of marvelous and never-ceasing advancement, we can hardly believe that for hundreds of years not a single step forward was taken; that for ten centuries "the torch of progress was extinguished in the blood of Christ; and that his disciples, moved by ignorant zeal, by insane and cruel creeds, destroyed with flame and sword a hundred millions of their fellow men." Having by inheritance come into possession of intellectual liberty; breathing the air of free thought and speech, which even a few years of unfettered science have given to us; not having endured the strife, not having suffered the pain, we can scarcely realize that "all the languages of the world have not the words with which to paint the agonies of man when the Church had power." We cannot conceive, for example, that the savage atrocities committed by the imperial monsters, Tiberius, Caligula, Claudius, Nero, Domitian and Cominius, were rivalled by the acts of the Christian popes, John XII, Leo VIII, Boniface VII, Benedict IX, and Alexander V; and that these Vicars of Christ on earth were the natural products of the theological system which they represented.

It is perfectly true, as Dr. Walsh in his defense of papal

government has so frequently and so triumphantly observed, that in Christendom, during the Middle Ages, scientific genius was born. His claim, that the thirteenth century was especially productive of great minds, is cheerfully admitted. But Dr. Walsh wishes it to appear that this redounds to the credit of the Church, and he sets forth only those facts which answer his purpose. He is again seen to be the advocate rather than the historian. He carefully fails to tell us that which is learned from all unprejudiced historians, namely, that the birth of scientific genius occurred in Christendom during the Middle Ages, in spite of the efforts of the Church to abort it; that at its very first breath scientific thought was stifled by theological miasma; that if by chance it survived and struggled through its early, sunless life, it was afterward invariably stunted, crippled, and deformed, almost beyond recognition, by papal superstition and despotism. He does not tell us, as does Lea, that at the close of the thirteenth century, "Society was harder and coarser, more carnal and more worldly than ever; and it is not too much to say that the Inquisition had done its full share to bring this about, by punishing aspiration, and by teaching that the only safety lay in mechanical conformity, regardless of abuses and unmindful of corruption." He does not tell us, as does Draper,—an authority quoted by Dr. Walsh whenever it suits his purpose—(and whose name, by the way, is on the *Index Expurgatorius*)—that, "The biography of any of the physicians or alchemists of the thirteenth century would serve the purpose of illustrating the watchfulness of the Church, the unsound condition of the Universities, the indirect patronage extended to heretics by eminent men and the manner in which the rival powers, ecclesiastism and philosophy, were preparing for the final conflict," mentioning as an example the case of Arnold de Villa Nova, the celebrated physician, who was persecuted by the Church, under an "accusation of defective orthodoxy" and driven all over Europe by papal authority.⁴ Dr. Walsh does not tell us that in accordance with the Church's policy of self-aggrandizement, and her zeal in the extermination of heretics, she connived with the State for the suppression of heresy at any cost, and that, as a result of that murderous compact Christendom was for a thousand years ruled by cowl and crown, with sword, chain

⁴ Draper's "Intellectual Development of Europe," Vol. II, p. 30.

and fagot. He does not tell us that this crime known as heresy was, and is, nothing more than the expression of one's honest, unbridled opinion upon scientific as well as religious questions; and that for this crime the Christian church of the Middle Ages tried, convicted and burned alive the noblest men of the age. Not content with this, she tried and convicted their dead bodies, in order that she might rob their widows and orphans. He does not tell us that "learned divines discussed the propriety of tearing out the tongues of heretics before they were burned; and that the general opinion was that this ought to be done, so that the heretic thus burned should not be able, by uttering blasphemies to shock the Christians who were burning them." He does not tell us that in those days no one was allowed to think, but all were commanded to obey. He does not tell us that it was in the thirteenth century, namely, in the year 1208, that the Inquisition was established, and that seven years afterward the Fourth Council of the Lateran enjoined all Kings and Rulers to swear an oath that they would exterminate heretics from their dominions; and that for any hesitation in carrying out this order the Church threatened those rulers with excommunication and complete loss of power, and that this threat was frequently executed. He does not tell us that "the sword of the Church was then unsheathed and that the world was at the mercy of infuriated priests whose eyes feasted on the agonies they inflicted. Acting, as they believed, or pretended to believe, under the command of God; stimulated by the hope of infinite reward in another world; hating heretics with every drop of their blood; savage beyond description; merciless beyond conception, these infamous priests, in a kind of frenzied joy, leaped upon the helpless victims of their rage. They crushed their bones in iron boots, tore their quivering flesh with iron hooks and pincers; cut off their lips and eyelids, pulled out their nails, and into the bleeding quick, thrust needles; tore out their tongues, extinguished their eyes; stretched them upon racks, flayed them alive; crucified them with their heads downward; exposed them to wild beasts; burned them at the stake; mocked their cries and groans; ravished their wives; robbed their children, and then prayed God to finish the holy work in hell." He does not tell us that the frightful criminal law of the Middle Ages

simply reflected the despotism and savagery of the Church. Even as late as the fifteenth century the following law was in force in England: "That whatsoever they were that should read the scriptures in the mother tongue, they should forfeit land, cattle, body, life and goods, from their heirs forever, and so be condemned for heretics to God, enemies to the crown and most arrant traitors to the land." The next year after this law was in force, in one day thirty-nine were hanged for its violation, and their bodies afterward burned. Laws equally unjust, bloody and cruel were in force in all parts of Europe. In those days "the wheel," the caldron of boiling oil, burning alive, flaying alive, tearing apart with wild horses, were the ordinary expedients by which the criminal jurist sought to deter crime. "An Anglo-Saxon law punished a female slave convicted of theft by making eighty other female slaves bring three pieces of wood and burn her to death, while each contributed a fine besides. In the Customs of Arques, granted by the Abbe of St. Bertin in 1321, there is a provision that if a thief have a concubine who is his accomplice, she is to be buried alive. Frederick II, the most enlightened Prince of his time, burned captured rebels to death in his presence, and is even said to have encased them in lead in order to roast them slowly. In 1261, in Touraine, the theft of a loaf of bread or a pot of wine by a servant from his master was punished by the loss of a limb. In France women were customarily burned or buried alive for simple felonies; and Jews were hanged by the feet between savage dogs, while men were burned to death for coining. The Church commanded that the principles she laid down for persecution of the heretic should be received into the public law of Europe. Frederick II accepted them in his civil edicts against heresy, whence they passed into the general compilations of civil and feudal law, and even into the bodies of local jurisprudence. His decrees in all their atrocity were required to be read and taught in the great law school of Bologna as a fundamental portion of jurisprudence, and were even embodied in the common law itself, and were repeatedly ordered by the pope to be inscribed irrevocably among the laws of all the cities and states which they could control, and the Inquisitor was commanded to coerce all officials to their rigid enforcement." These are some of the happenings in the hallowed thirteenth

century; that period of the Middle Ages which produced Pope John XXII. These were the days when "the flesh of the good and the true rotted in the clasp of chains, and flames destroyed the heroic. In the name of the most merciful God, his children were exterminated with famine, sword and fire. Over the wild waves of battle rose and fell the banner of the cross, and the robes of the Church were red with innocent blood." And yet we are told by the Professor of the History of Medicine in Fordham University that the centuries during which the Church had full control gave us "everything worth while in our modern life." Does he not know that when the Roman empire fell darkness settled on the world? Has he forgotten that "this darkness lasted for a thousand years, and that during all that time the Church of Christ held with bloody hand the sword of power? These years were the starless midnight of our race. Art died; law was forgotten; toleration ceased to exist; charity fled from the human breast and justice was unknown. Kings were tyrants; priests were pitiless, and the poor multitudes were slaves. In the name of Christ men made instruments of torture, and the *auto da fé* took the place of the gladiatorial show. Liberty was in chains, honesty in dungeons, while Christian superstition ruled mankind. The believers in the blessedness of poverty became rich, avaricious and grasping, and those who had said, 'Sell all and give to the poor,' became the ruthless gatherers of tithes and taxes. The gospels were interpolated by the designing and ambitious. The Church was infinitely corrupt. Crime was crowned and virtue scourged. The minds of men were saturated with superstition. Miracles, apparitions, angels and devils, had possession of the world. The nights were filled with incubi and succubi; devils clad in wondrous forms and imps in hideous shapes, sought to tempt or fright the soldiers of the cross. The maddened spirits of the air sent hail and storm. Sorcerers wrought sudden death, and witches worked with spell and charm against the common weal. In every town the stake arose. Faith carried fagots to the feet of philosophy. Priests—not politicians—fed and fanned the eager flames. The dungeon was the foundation of the cathedral. Priests sold charms and relics to their flocks to keep away the wolves of hell. Every calamity then—as now—increased the power of the Church. Pestilence supported

the pulpit, and famine was the right hand of faith. Christendom was insane."

Now, in such times as these, when the Inquisition was everywhere busy with judicial murder; when the faintest suggestion of a charge of heresy against the experimenter, or against any man, woman or child, might cost that person imprisonment, torture, and the stake; when the greatest of all mediæval chemists, Roger Bacon (a contemporary of John XXII) notwithstanding he was an orthodox Christian, had just a few years previously been imprisoned and persecuted to the death on the charge of "Compact with Satan" and "Suspected Novelties"; when Pope John XXII was himself charged with heresy by Phillip de Valois, who threatened to burn him if he did not recant;⁵ when alchemy was one of the *Sept Ars Demonials*, for the aid of Satan was necessary to the transmutation of metals and the philosopher's stone was only to be obtained by spells and charms;⁶ when in the General Chapter of the Franciscans a statute had been adopted forbidding under the penalty of excommunication and imprisonment the "dabbling in alchemy";⁷ in such times as these, I ask, what would be the effect upon the study of chemistry of the papal bull *Spondent pariter*, which begins with the words, "Alchemies are forbidden." (It should be remembered that at this time, in Christendom, chemistry as a positive science was as yet unborn, and that such chemical knowledge as had been then developed was entirely in the hands of the alchemist.) If it be true, as Lea and other authorities tell us,⁸ that alchemy was classed with sorcery and the occult arts, and if it be also true, as is shown by the bull *Super illius specula*, that the practice of those arts was considered by Church authority as heretical and therefore punishable with death by burning, what would be the inevitable effect of that bull on possible attempts at chemical experiment? When to this is added the fact that the pope issuing the bull was himself a superstitious man and a tyrannical ruler, who was living in constant terror of being killed by magic or sorcery, and who had already burned people to death on the charge of attempting his own life by such means,—is it unreasonable to conclude that the

⁵ Lea, "History of the Inquisition," Vol. III, p. 504.

⁶ *Ibidem*, p. 436.

⁷ *Ibidem*, p. 457.

⁸ *Ibidem*, pp. 435-436.

reign of Pope John had a deterrent influence on the study of chemistry and that his bulls *Spondent pariter* and *Super illius specula* contributed largely to that result? In the face of the facts is it possible for the unprejudiced person to arrive at any other conclusion? But Dr. Walsh says, "The bull" (*Spondent pariter*), "as I showed in my previous paper, had no such meaning. There was no persecution of chemists or alchemists because of it." That many writers are at variance with Dr. Walsh on that point may be shown by an examination of their opinions, as set forth in the literature on the subject. Here, for example, is one: "The first edict against alchemy was issued by Pope John XXII,—*Spondent pariter*, which stigmatizes as infamous all those who have abandoned themselves to the researches of alchemy, ordering them to make reparation, and stripping of their dignities all ecclesiastics who had taken any such part with the laity."⁹ And again, George F. Fort says:¹⁰ "By a papal bull in the commencement of the fourteenth century the pursuit of alchemy was placed among forbidden practices, as detrimental to the Church and provocative of heresy." But the most available, and probably the most reliable authority on this whole subject is the work of Andrew D. White, entitled, "A History of the Warfare of Science with Theology in Christendom"—Dr. Walsh to the contrary notwithstanding. In the chapter (vol. 1, chap. 12) of that work, entitled, "From Magic to Chemistry and Physics," the author refers his readers to one hundred and fifty-three accepted authorities in support of his contention that "the physical sciences for twelve centuries were discouraged or perverted by the dominant orthodoxy"; and some of these authorities are seen to refer specifically to chemistry and its prohibition by Pope John XXII.

We now take up the next question raised by Dr. Walsh. In my address, when referring to the relation of the Roman Church to the scientific achievement of the Middle Ages, I made the following assertion: "To attempt the study of chemistry, physics, hygiene or medicine, was to fly directly in the face of the Maker of the Universe and was therefore forbidden." To this Dr. Walsh takes exception and says in reply, "Before the Reformation, over twenty medical schools

⁹ Figuier's "L'Alchimie et les Alchimistes," Paris, 1856.

¹⁰ Fort's "History of Medical Economy During the Middle Ages."

were founded, quite enough for the comparatively small population of Europe at this time. The course was five to seven years, instead of the two and three years of the nineteenth century. The lengthening of the course was due mainly to ecclesiastics—the maligned Pope John XXII was one of them—and all of these schools did good work in the branches mentioned. (For a ready reference, see Prof. Clifford Allbut's address at St. Louis on "Medicine and Surgery down to the Sixteenth Century.") One of the most prominent of these medical schools was at Rome, attached to the Sapienza, which owes its foundation to Pope Boniface, the same who is slandered as having forbidden anatomy, and to which many of the most distinguished anatomists of Italy were invited as professors." What does Dr. Walsh mean by all this? I observed that the Church of the Middle Ages held and taught that to study chemistry, physics, hygiene and medicine was to fly in the face of God, and that, therefore, those studies were forbidden. Dr. Walsh attempts to answer this by telling us that before the Reformation "over twenty medical schools were founded in Europe." This is cheerfully admitted; but what has that to do with my remark, that the Roman Church of the Middle Ages forbade the study of hygiene, physics or medicine? I said nothing in this connection about the Reformation. My statement referred to the Middle Ages. Is it necessary to explain to the professor of History at Fordham what is meant by the words "Middle Ages"? Does he not know that the period in the world's history thus designated refers to that portion of it which begins with the reign of Constantine, the first Christian emperor (A. D. 305 to A. D. 337), and extends to the Renaissance,—which dates from the taking of Constantinople by the Turkish emperor, Mahomet II,—in 1453? Does he not know that the Reformation was not until 1517-20 A. D., and that during the interval of time between the beginning of the Italian Renaissance and the German Reformation (sixty-four years or more) the inspired teachings of the Church were shattered by a thousand influences, notably those which had followed the invention of gunpowder, the art of printing, the mariner's compass, the discovery of America by Columbus in 1492, the voyage of De Gama in 1497, the circumnavigation of the globe by Magellan, beginning in 1519 and ending in 1522; and that she was

forced, in consequence, to assume a less despotic attitude toward all learning, thus opening the way to the more rational teaching in all departments of science, and making possible, in spite of ecclesiastical opposition, the founding of such schools as the College of London by Thomas Linacre of Canterbury (1461-1524), who was called the "Restorer of Medicine"? The truth is that nearly all the medical celebrities whom Dr. Walsh has appropriated for the glorification of the Middle Ages were products of the Renaissance. Anuce Foes of Metz (1495), who consecrated forty years of his life to the translation of the Hippocratic writings; Jerome Mercurialus, who wrote a classic on the gymnastics of the ancients; Jacques Du Bois, born in 1418, near Amiens, the first to arrange all the muscles of the human body, determine their function and give names to them, who discovered the valves of the large veins, lectured in Paris, before a large class of students, on anatomy, physiology, hygiene, pathology and therapeutics; taught in Montpellier in 1529, and, subsequently, in the Royal College, until his death (1555); Andrew Vesalius, of Brussels (1514-1564), who pointed out the anatomical errors in the teachings of Galen; the great Columbus of Cremona (1490-1559), pupil of Vesalius; Eustachius Fallopius; Jerome Fabricius, were all products of the Renaissance.

Dr. Walsh knows all this. His reference, in this connection, to the Reformation, is only one of his little ways of teaching history, with which we are fast becoming familiar. He knows very well that the mere fact that before the Reformation some schools "were founded in Europe" does not prove anything, one way or another, on the point at issue,—the Inquisition was "founded" before the Reformation, but Dr. Walsh would not, I presume, set that fact forth and introduce it in evidence as proof that the mediæval Church did not forbid the study of science. However, this question of the schools opens up such a profitable subject that Dr. Walsh's contention regarding them becomes worth while answering. It may be remembered that in his first contribution to this discussion Dr. Walsh criticizes my estimate of the Middle Ages, claiming that from that period came "everything worth while in our modern life." This criticism might seem not wholly unjust and this claim not altogether unreasonable, but for the fact that Dr. Walsh adroitly gives the impression *that the achieve-*

ments of the Middle Ages are to be credited to the Church. It is this false impression,—the same mischievous perversion of the truth, which it is the policy of the Church, both Catholic and Protestant, to disseminate,—that it seems important to destroy; in the discussion of this matter, the question of the schools will be answered incidentally.

But first of all, upon the merits of the point at issue, would it be asking too much of Professor Walsh to name, out of “everything worth while,” *one scientific truth which his Church, throughout all the centuries of her existence, has given humanity?* This certainly should not be much trouble to him; and, since I have been thus bold, may I be permitted to trespass further, and ask him to be good enough to name *one scientific movement which his Church has not opposed*—not many, just one. Now, I beg of Dr. Walsh that he will not answer this simple question by citing the names of men. It is cheerfully and freely admitted that during the Middle Ages, as always, everywhere, the natural human instincts remained unaltered and alive. Even beneath the hard crust of Christian orthodoxy, the germ of progress quickened. The Church did not succeed in entirely destroying human ideals. Notwithstanding her immoralities, man remained virtuous, great and noble. Every age has produced men who became greater than their creeds—greater than their gods. My question, it will be seen, does not refer to men, but to the divinely inspired Church of Rome. I am asking Dr. Walsh to name one scientific truth which *she* has given to the world. I ask this in all humility, because if it be true that Christendom has given us “everything worth while in our modern life,” then have the councils of wisdom been darkened with words of foolishness by such men as Schleiden, Sprengel, Bass, Waite, Thomsen, Puschmann, Hallum, Leckey, Guizot, Racine, Von Ranke, de Cormenin, Rambaud, Berthelot, Mosheim, Buckle, Fort, Figuier, Draper, Park, Lea, Painter, White, Bruce, von Meyer, Taylor, Huxley, Spencer, Lang, Gibbon, Dollinger, Darwin, Müller, Whewell, Haeckel, Reade, Motley, Svoboda; the hundreds of authorities referred to by Andrew D. White; the modern authors of the text-books on education adopted by, and used in, our various academies, colleges and universities (except the Jesuit), the British Encyclopædia, and innumerable others: for we learn from them that “we are not indebted to the

Church for any useful fact; that the seeds of thought were sown in our minds by the Greeks and Romans; that our literature came from those seeds; that the great literature of our language is pagan in its thought, pagan in its beauty, pagan in its perfection"; that the Christians of the Middle Ages knew all about the worlds beyond the grave, but nothing concerning the world in which we live; that they taught and insisted that the earth is flat—"a little dishing, if anything"—that it was about five thousand years old; made in six days, and that all the hosts of the heavens were created especially to give it light. After the inspired Church had taught these doctrines for a thousand years, they tell us, a dispute concerning the shape of the earth arose between her and a sailor named Magellan, and the fact was found to be with the sailor. These men tell us that "science was thrust into Europe on the point of a Moorish spear"; they credit the scientific thought of the Christian world to the pagan,—Indian, Greek, Roman, Hebrew, and Moor. They tell us that modern science owes its origin to the invasion of Europe by the infidel Saracen, who in 711 A. D. crossed over from Africa, landed at Gibraltar, met with force of arms the resisting Christian, defeated him, occupied Catholic Spain, and in an incredibly short time inaugurated there a scientific movement which soon resulted in the establishment of a civilization the like of which, in some respects, the Christendom of even to-day cannot boast. They tell us that while Catholic Europe was in a state of bestial barbarism, when the dwellings of *rulers* in Germany, France, and England were scarcely better than stables, "Chimneyless, windowless, and with a hole in the roof for the smoke to escape, like the wigwams of certain Indians"; when the native of those countries was clothed in a garment unchanged until it dropped to pieces of itself, a loathsome mass of vermin, stench and rags; when the haircloth shirt of Thomas á Becket was filled with vermin, the Mohammedans who had brought to Spain the luxuries and civilization of Asia, were dwelling in such cities as Cordova, which under their scientific administration had developed into a city of two hundred thousand houses and more than one million inhabitants, and whose solidly paved streets were lighted for ten straight miles—seven hundred years after this time, says Draper, there was not so much as one public lamp in Chris-

tian London, and Paris was in a similar condition. We are informed by those men that while Roman Catholics in Christian Europe were wallowing in squalor, filth, ignorance, and papal savagery, tearing out each others tongues, extinguishing each others sight, burning heretics and confiscating their property, the despised Moors, followers of Mohammed, were engaged in establishing in Grenada, Seville, Cordova, Toledo and other Spanish towns, observatories, libraries, universities, colleges and elementary academies; that to every mosque was attached a public school in which the children of the poor were taught to read and write. These poor, deluded writers of history tell us that in the tenth century after Christ the Saracens, who at that time were governors of a vast empire, established colleges in Mongolia, Egypt, North Africa, Morrocco, Fez, and in Spain; they tell us that in mathematics these pagans introduced into Europe the ten numerals, taught algebra and trigonometry, understood cubic equations, knew the art of surveying, made catalogues and maps of the stars, gave the stars the names they still bear, ascertained the size of the earth, determined the obliquity of the ecliptic, fixed the length of the year, constructed astronomical instruments, made clocks of various kinds, and were the inventors of the pendulum; that they were the originators of chemistry, discovered sulphuric acid, nitric acid, and alcohol, and were the first to publish pharmacopœias and dispensaries; that in mechanics they determined the laws of falling bodies, understood the mechanical powers, ascertained the attraction of gravitation, taught hydrostatics and the laws of specific gravity; that they understood the science of optics—discovered that a ray of light does not proceed from the eye to the object, but from the object to the eye; that they manufactured cotton, leather, paper and steel; that they wrote romances, novels and poetry, produced dictionaries and encyclopedias, compiled statistics; that they developed music, art, and philosophy; that they gave us the game of chess; that in the science of agriculture they skilfully employed manures and methods of irrigation, showed great improvement in the raising of cattle, and introduced the culture of rice, sugar and coffee; that in their schools they taught the modern doctrine of evolution and development, anticipating Darwin and Spencer. For information concerning what the Moors did for the

science of medicine, I beg to refer the reader especially to the little book entitled, "An Epitome of the History of Medicine," by Roswell Park, Professor of Surgery in the University of Buffalo, because I have carefully read it and find that it sets forth briefly the facts as presented fully by other historians. Dr. Park there tells us about Arabian medicine as it was developed in Europe under the Saracens. He tells us how the Moslem ruler, Haroun-al-Raschid, whose dominions extended from the borders of the Indus to the heart of the Spanish Peninsula, in the eighth century, embellished Bagdad, his capital, with schools and hospitals. He tells us that this ruler's son, Almamon, founded the Academy of Bagdad, which became the most celebrated of the age, and that he spared no pains to draw to his court the most illustrious men of all countries. This man "enjoined each of his ambassadors to purchase all the writings of the philosophers and physicians that could be found, and these he required to be translated into Arabic," giving as a reward for that work the actual weight of the translated volume in gold. The *éclat*, says Dr. Park, which the Moorish Caliphs shed upon Spain from the tenth to the thirteenth century is well known. The cities of Cordova, Toledo, Seville, and Murcia possessed public libraries and academies, and students from all parts of Europe flocked to them to be instructed in arts and sciences. The library of Cordova alone embraced more than two hundred and twenty-four thousand volumes. Thus it will be seen, says Park, "that the dominion of mental and temporal affairs passed from the Greeks and Romans to the Saracens." By the seventh century Arabian physicians were in high repute and so much eminence was finally achieved by them that more than four hundred of them are known by name as authors. Many of these men practiced their profession in Spain and there wrote many books on medicine, philosophy, mathematics, astronomy and other sciences. Many of their medical works were large systems of medicine, including physiology, pathology, diagnosis, surgery, treatment, obstetrics, midwifery, chemistry and pharmacy. They were the first to differentiate eruptive fevers, to which the Greeks had paid little or no attention. Arabian medical writers up to this time had produced, besides the translations from the Greeks—Hippocrates, Galen, Oribasius and others—the original works of Bachtis-

chua, celebrated in Jondisapur for his medical learning, and director of the medical school there; those of Alkindus and of Mesue—forty of whose books have been catalogued—of Serapion the elder and of Rhazes, of whose writings two hundred and thirty-seven monographs have been catalogued, his greatest publication being *Liber Continans*, divided into thirty-seven books, constituting an abridgement of the science of medicine and surgery up to this time. The *Almaleki* of Haly-Abbas—who died in A. D. 994—consists of twenty volumes, constituting a complete system of the theory and practice of medicine. The work entitled *De Simplicibus*, of Mesua the younger of Damascus, who lived in the eleventh century, for hundreds of years a standard authority on *materia medica*, was printed in twenty-six editions in the fifteenth century, and later was used in the formation of the first London pharmacopœia issued by the College of Physicians in the reign of James I, while the work of Abulcasci of Cordova was in the twelfth century translated into Latin and was the standard authority on surgery in Europe for centuries. Then came the great work of Avicenna, who was born in Bokhara in A. D. 980. He gave the world the *Canon-Medicinæ*, which remained a classic for six centuries, constituting the medical code of Asia and Saracenic Europe. Avenzoar, born in 1113 A. D., achieved great celebrity as a physician throughout Spain and Africa. He wrote many medical works, among others a treatise on renal disease in which he outlined the treatment for calculus and described an operation for its relief. Averroës, born A. D. 1116 in Cordova, wrote extensively on medicine and philosophy. He lived in Seville for many years, where he was greatly esteemed and finally knighted. He was subsequently called to the Court of Spain and Morocco, where he received the highest honors. He died in A. D. 1198. From him descended a number of physicians who in their professional work achieved more or less reputation. Maimonides, the Jew, who was born in Cordova, A. D. 1135 and died in A. D. 1204, was followed by a large number of Arabian physicians, who exhibited great enthusiasm in the translation into Arabic of the medical literature of the Greeks, thus preserving many of its treasures. “*In the medical history of these centuries—eighth to close of thirteenth—in all Europe, not under Moslem rule, there was but one man entitled to mention as an author in medicine,*

John Acturias, the son of one Zacharie."¹¹ "Little is known of this man," says Park, "except that he lived at the close of the thirteenth century and was employed at Constantinople, his surname being the honorary title of court physician. He wrote several volumes, for the most part abridgements to commentaries on the doctrine of Galen. He laid great stress on the theory of critical days and sustained his views by astronomical hypotheses most ingeniously combined. His was the first Greek work in which was mentioned the remedies introduced by the Arabians; yet he does not have a word to say of variola, measles, spina-Ventosa, and other affections fully described by the Arabian authors."

Thus it would seem that any one who becomes reasonably familiar with the history of the Arabic period in medicine, (which, as we have ascertained, began with the second destruction of the Alexandrian Library, 640 A. D. and ended with the fourteenth century) will naturally conclude that any rational medicine taught in the medical schools referred to by Dr. Walsh in his answer must have originated—not as he teaches, in Christendom with the Roman Catholic, but with the pagan Saracen and the persecuted Jew. Is this conclusion supported by authority? Let us see. Here are the words of M. J. Schleiden:¹² "The Jews were early established in Arabia, where they filled places of high honor and where Arabian genius exerted a happy influence on the language and scientific and poetical culture of the race. In all the large cities of Spain, France and Italy, sprang schools and academies, acquiring such renown that Christians, even ecclesiastics, were often counted among their following. At the same time, the Jewish schools of Bagdad, Caironan and Neron attained great prosperity under the Arabs, as well as the Schools of Toledo, Cordova, in Spain; Lunel, Béziers, Beaucaire and Narbonere, in France; Modina, Mantua, Padua, Génes, Naples, Amalfi, Bénévent and Rome, in Italy, without speaking of many other cities. To the Jews must be accredited the foundation of the schools of medicine at Montpellier, and they were the chief contributors to the creation of the schools of Salerno."

¹¹ Park, "Epitome of the History of Medicine," p. 66.

¹² "*Les Juifs et la Science au Moyen-âge.*"

And then comes George F. Fort, who says:¹³ "The conquest of Spain by the Arabs and their rule for centuries, constituted the principal source from which emanated the energizing forces whose operation modified at length the crude medical systems of Europe and gave them a stricter scientific basis. From the year 711, when the Arabs first entered the region of ancient Iberia, and, with uniform success, to the portals of Tour, established permanently their dominion, to the tenth century, a great and wonderful advance was made in those sciences which constituted the excellence of this strange people. In those countries adjacent to Europe where such accomplishments were accessible to the north, the Arabians, through a stretch of two centuries pursued with ardor that erudition which was to give new life and the principles of unlimited learning to Western Europe."

Louis Figuier in discussing the origin of chemical science says:¹⁴ "In the eighth century it penetrated into Spain, which became the active center of Hermetic work and remained the sole repository of the sciences from the ninth to the eleventh centuries, when the entire world was plunged in the most profound barbarism. The small number of enlightened men scattered throughout Europe repaired to the schools of Murcia, Toledo, Seville, etc., and thus alchemy spread through the West. Ville-neuve, Saint Thomas, Raymond Lulle, and Roger Bacon imbibed the taste for alchemy from the Arabs."

In considering this point, Baas says:¹⁵ "After the death of Alexander the Great, B. C. 323 the city of Alexandria became the chief nursery of medical science, and from the schools founded by her at Salerno was transplanted among the Romans about B. C. 100. From Byzantium, an offshoot of Greek medicine of historical importance, it was imported to the Persians and Arabians by the Nestorians, banished in the fifth century for heresy, who founded or continued schools in Gondisapor and other places. Under the direct influence of the Nestorians, and chiefly by means of Jewish physicians in the ninth century, were founded the medical schools of lower Italy at Monte Casino and Salerno. The Arabians, extremely well versed in chemistry and technology, acquired very high intellectual development in the West, particularly in medical culture. They introduced

¹³ Fort, "History of Medical Economy During the Middle Ages," 1883.

¹⁴ "L'Alchimie et les Alchimistes," 1856.

¹⁵ "Outlines of the History of Medicine and the Medical Profession," p. 236.

a great number of active remedies from the vegetable kingdom and especially from the department of chemistry,—a science which they fairly created—and brought to life the pharmacies, as an advance in practice. They contributed directly to the reform of practical medicine by the exhibition of chemical remedies, indirectly by the union of the natural sciences with medicine, which,—on the advice of Aristotle, indeed—had its origin with them. They first entered upon the clinical method of instruction; * * * preserved a lay medicine at a time when, as in the West, priests and monks only, in Christian ignorance, treated the sick with supernatural and superstitious remedies;—a period which, without the Arabians, would have lasted at least, longer than it did. Progress in the sphere of religion (fourteenth century) now appeared in definite shape and upon the open road of anti-papal sectarianism. (Wickliffites, p. 287.) It shook the infallibility of the pope and insisted upon an improved education, though astrology, theosophy, miracle-working and clerical quackery, still walked openly in the light of day, while alchemy was cultivated in secret.”

Professor Draper, in his chapter on the “Restoration of Science,” says.¹⁶ “The first medical college established in Europe was that founded by the Saracens at Salerno, in Italy.”

The question of the origin of the schools “founded before the Reformation” is considered in the *Encyclopædia Britannica* under the heading “Universities,” as follows:¹⁷

“That the earlier universities took their rise to a great extent in endeavors to obtain and provide instruction of a kind beyond the range of the monastic and cathedral schools appears to be very generally admitted, and this general fact has its value in assisting us to arrive at a conclusion with respect to the origin of the first European university, that of Salerno in Italy, which became known as a school of medicine as early as the ninth century. The circumstances of its rise are extremely obscure, and whether it was monastic or secular in its origin has been much disputed. One writer derives its origin from an independent tradition of classical learning which continued to exist in Italy down to the tenth century. Another writer maintains that it had its commence-

¹⁶ “Religion and Science,” p. 115.

¹⁷ *Encyclopædia Britannica*, Vol. 23, p. 833.

ment in the teaching at the famous Benedictine monastery of Monte Casino, where the study of medicine was undoubtedly pursued. But various facts may be urged in contravention of such a theory. The school of Salerno, so far as history can be traced, appears to have been entirely a secular community; it was distinguished also by its Catholic spirit, and at a time when Jews were the object of religious persecution throughout Europe, members of this nationality were to be found, both as teachers and learners, at Salerno. Situated, moreover, as it was, on the sea coast, its communication with the neighboring island of Sicily was easy and frequent and it would accordingly seem far more probable that it was owing to the new knowledge gained from the Saracens, after their occupation of that island, that Salerno acquired its reputation. It was by a band of these invaders that Bertharius, Abbot of Monte Casino, and the author of certain medical treatises, was massacred along with his monks, in the year 883. The Saracens were famed for their medical skill, and, by their translations of Galen and Hippocrates, did much to advance the study, and according to Jourdain, there were translations from the Arabic into Latin, long before the time of Constantine the African, but these versions have perished. In the course of the eleventh century, under the teachings of Constantine the African,—1087—the celebrity of Salerno became diffused all over Europe.”

Professor Roswell Park, who has evidently given this point considerable thought, says:¹⁸

“The earlier teachings and practice of Salernum were a curious mixture of methodism, dogmatism, and superstition. The latter may be better understood when it is recalled that the practice of medicine for an extended period was confined almost exclusively to ecclesiastics, who by their very education were prone to superstition and upheld the efficacy of charms and relics, and the active intervention of saints and martyrs, as well as the myrmidons of evil; hence arose many of the conflicting and absurd notions peculiar to the period. The prevalence of the doctrines of medical methodism was due to the character of the writings most accessible to students of that day, such as those of Coelius, Aurelianus, and others; and it is curious that Celsus, the most elegant of medical au-

¹⁸ “*Epitome of the History of Medicine*,” pp. 82-83.

thors, was never popular among medical monks. The Hellenic language having almost disappeared from Italy by the sixth century, the works of the Greek authors had become a sealed book to the vast majority, even of the better educated; hence the purer sources of medical knowledge were not available. Although the School of Salerno, at a later date, prided itself upon its devotion to the "Father of Medicine," the Hippocratic writings were not known at this period, and when Constantine the African, by the translation of Arabian works, introduced a new element into the Salernian school, he ingrafted upon its medical teaching a form of doctrine which found a congenial atmosphere, in which it thrived vigorously, while, a century later, the translation of Gerard of Cremona gave a stronger impulse to the growth of Hippocratic medicine than the Hippocratic doctrine."

Puschmann says:¹⁹ "Christianity concerned itself with the moral culture of mankind; to the training of the intellect it remained indifferent;—sometimes even openly hostile. This was only natural; for in a theory of life which, like that held by the Christian church, saw its goal in the perfect ideal of a world invisible, and declared the moral improvement of man to be its principal or only task, no great importance could be ascribed to scientific investigation. But science stood in direct opposition to Christian dogma, when it made the manifestations of nature, as, for example, the human body,—which the Christian faith held as impure and worthless, if not despicable,—the subject matter of its study. The natural sciences and theoretical medicine, consequently, made no essential progress under the authority of the Christian Church."

Professor F. N. Painter, in referring to the Mohammedans, and their influence on education in Christendom, says:²⁰ "For a time they were the intellectual leaders of Europe. Their schools in Spain were largely attended by Christian youth from other European countries, who carried back with them, to their homes, Arabian science, and through it stimulated intellectual activity in Christian nations. * * * The richest fruit of this newly awakened spirit in Europe was the founding of the universities. They arose independently of both Church and State. In the beginning, they consisted of free associa-

¹⁹ Puschmann's "A History of Medical Education," Trans. by E. H. Hare.

²⁰ Painter's "History of Education," pp. 114-119.

tions of learned men and aspiring youths who were held together alone by their mutual interest in science. In this way the University of Bologna had its origin in the twelfth century, for the study of law; and the University of Salerno, shortly afterward, for the study of medicine."

Thus it will be seen that it was the scientific spirit introduced into Christendom by the *pagan*, to which we are indebted for the "founding of the schools," which Dr. Walsh tells us, "did good work in the branches mentioned,—chemistry, physics, hygiene, and medicine,—and not to any Roman Catholic influence. We see that it was this scientific movement, which was introduced into Christendom by the Moors, that was the mother of the revival of learning. "It opened the literary treasures of Greece and Rome, provided a new culture for the mind, awakened dissatisfaction with the scholastic teachings of the Church and tended to emancipate thought from the subjection to ecclesiastical authority." ²¹ This awakening gave to Christendom the three great Italian writers, Dante, Boccaccio, and Petrarch—and the Renaissance was born. Manuscripts were then collected, translations were made, academies were established and libraries were founded, and thus the scientific spirit of the pagan Saracen—always vigorously resisted by the Church—took possession of Christian Italy. From this point, that spirit spread all over Europe. Everywhere it contributed to the culture and intellectual emancipation of man, making possible the production of humanists as represented by such men as Agricola, Reuchlin, Erasmus; and, finally, opposed in every turn of its onward march by the machinations of the Christian church,—resulting in Martin Luther and the Reformation. Thus were the issues joined in the matter of the Church *vs.* Science, and thus the mighty struggle continued on down through all the centuries, until the present.

But what became of this scientific spirit, this superb civilization, which was thus introduced into Christendom by Jew and Saracen? What happened to the great philosopher and physician, Averroës, who taught the European of those days that wonderful philosophy of the Eastern world, which finally became known in Christendom as Averroism? that imposing doctrine of emanation and absorption; that doctrine

²¹ Painter, *Soc. cit.*, p. 120.

of the soul which is in accord with the admission of the indestructability of matter and force, and which is to-day held by the majority of advanced thinkers to be in harmony with a rational interpretation and explanation of the universe and of human existence? What was the fate of the renowned Maimonides and of the many Jewish thinkers, philosophers, merchants, bankers, financiers, physicians, who had joined hands with the Arabs in their endeavors to establish in Christian Europe a civilization which must ultimately have had an uplifting, enduring effect upon all humanity? What became of the elegance, refinement, culture, luxury, morality, religion, and philosophy which surrounded the Spanish Khalifs?

"In the tenth century, the Khalif Hakem II. had made beautiful Andalusia the paradise of the world. Christians, Mussulmen, Jews mixed together without restraint. There, among many celebrated names that have descended to our times, was Gerbert, destined, subsequently to become pope. There, too, was Peter the Venerable, and many Christian Ecclesiastics. Peter says that he found learned men, even from Britain, pursuing astronomy. All learned men, no matter from what country they came, or what their religious views, were welcomed. The Khalif had in his palace a manufactory of books, and copyists, binders, illuminators. He kept book-buyers in all the great cities of Asia and Africa. His library contained four hundred thousand volumes, superbly bound and illuminated."

Can we find in the world's history the record of any organized institution, except that founded on "revealed" religion—divinely inspired,—which has exhibited toward intellectual endeavor so much savagery as did the Roman Church in her persecution, torture, banishment, and murder of Spanish Jew and Saracen, during her destruction of Andalusian civilization? Is there any suggestion contained in the history of the uncivilized Iroquois or Algonquin that would lead us to believe that either of those tribes would have ruthlessly destroyed such evidence of learning and progress?

"The Spanish khalifs had surrounded themselves with all the luxuries of Oriental life. They had magnificent palaces, enchanting gardens. Europe at the present day does not offer more taste, more refinement, more elegance, than might have been seen at the epoch of which we are now speaking,

in the capitals of the Spanish Arabs. Their streets were lighted and solidly paved. The houses were frescoed and carpeted; they were warmed in winter by furnaces, and cooled in summer by perfumed air brought by underground pipes from flower-beds. They had baths and libraries, and dining halls, fountains of quicksilver and water. City and country were full of conviviality, and of dancing to the lute and mandolin. Instead of the drunken and gluttonous wassail orgies of their Northern neighbors, the feasts of the Saracens were marked by sobriety. Wine was prohibited. The enchanting moonlight evenings of Andalusia were spent by the Moors in sequestered, fairy-like gardens or in orange groves, listening to the romances of the story-teller, or engaging in philosophical discourse; consoling themselves for the disappointments of this life by such reflections as that, if virtue were rewarded in this world, we should be without expectations in the life to come; and reconciling themselves to their daily toil by the expectation that rest will be found after death—a rest never to be succeeded by labor.”

Again I ask, what became of this splendid civilization? The answer is not far to seek. It was scattered by religious dogma, as are the dried and withered leaves before the cruel winds. Christian orthodoxy, with that hatred of science born of “revelation,” persecuted, imprisoned, tortured, banished, and burned to death, these founders of the most magnificent civilization of which Europe had ever dreamed. The Roman Church murdered them by the thousand, simply because they were Jews and Arabs. “In the first year of the Inquisition, 1481,” says Draper, “two thousand victims were burnt in Andalusia; besides these, many thousands were dug up from their graves and burnt; seventeen thousand were fined or imprisoned for life. Whoever of the persecuted race could flee, escaped for life. Anonymous accusations were received, the accused was not confronted by witnesses, torture was relied upon for conviction; it was inflicted in vaults, where no one could hear the cries of the tormented. As, in pretended mercy, it was forbidden to inflict torture a second time, with horrible duplicity it was affirmed that the torment had not been completed at first, but had only been suspended out of charity until the following day. The families of the convicted were plunged into irretrievable ruin. With unutterable disgust and

indignation we learn that the papal government realized much money by selling to the rich dispensations to secure them from the Inquisition." "But," continues Professor Draper, "all these frightful atrocities proved failures. The conversions were few. The Church, therefore, insisted on the immediate banishment of every unbaptized Jew. On March 30th, 1492, the edict of expulsion was signed. All unbaptized Jews, of whatever age, sex or condition, were ordered to leave the realm by the end of the following July. If they revisited it, they should suffer death. They might sell their effects and take the proceeds in merchandise or bills of exchange, but not in gold or silver. Exiled thus suddenly from the land of their birth the land of their ancestors for hundreds of years, they could not, in the glutted market that arose, sell what they possessed. Nobody would purchase what could be got for nothing after July. The Spanish clergy occupied themselves by preaching in the public squares, sermons filled with denunciations against their victims, who, when time for expatriation came, swarmed to the roads and filled the air with cries of their despair. Even the Spanish on-lookers wept at the scene of agony. Church authority, however, enforced the ordinance, that no one should afford them any help. Of the banished persons some made their way into Africa, some into Italy; the latter carried with them to Naples Ship-fever, which destroyed not fewer than twenty thousand in that city, and devastated that peninsula; some reached Turkey, a few, England. Thousands, especially mothers with nursing children, infants, and old people, died by the way, many of them in the agonies of thirst. This action against the Jews was soon followed by one against the Moors. A *pragmatica* was issued at Seville, February, 1502, setting forth the obligations of the Castillians, to drive the enemies of God from the land, and ordering that all unbaptized Moors in the Kingdom of Castile and Leon, above the age of infancy, should leave the country by the end of April. They might sell their property, but not take away any gold or silver; they were forbidden to emigrate to the Mohammedan dominions; the penalty of disobedience was death. Their condition was thus worse than that of the Jews, who had been permitted to go where they chose. Such was the fiendish intolerance of the Spaniards, that they asserted the government would be justified in taking the lives

of all the Moors, for their shameless infidelity. What an ungrateful return for the toleration that the Moors in their day of power had given to the Christians! No faith was kept with the victims. Grenada had surrendered under the solemn guarantee of the full enjoyment of civil and religious liberty. At the instigation of Cardinal Ximenes, that pledge was broken, and after a residence of eight centuries, the Mohammedans were driven out of the land."

As we gaze upon this picture of Christian savagery, rapine and murder, let us pause before the central figure. Cowled, beaded, with crucifix in hand, triumphant amid the charred and mutilated bodies of ten thousand innocent victims, gloating over the ruin he has wrought, behold the ambassador of the "Vicar of Christ," TORQUEMADA.

Thus it would appear that Dr. Walsh has been somewhat unfortunate in citing the pre-Reformation schools as evidence of the Church's fostering care of science. But this has been a digression. Let us return to the issue.

Is it true, as I had occasion to remark, concerning the Church's government of the Middle Ages, that in those days, "To attempt the study of chemistry, physics, hygiene, or medicine, was to fly directly in the face of the Maker of the Universe and was therefore forbidden." This is one of the statements concerning which Dr. Walsh said, "It is because of these assertions that I said there was no statement of Dr. Cruikshank that had a basis of historical truth." Let us examine this. Can there be any doubt that the Roman Church of the Middle Ages forbade the study of every branch of science? Did she not insist that, "Nothing is to be accepted save on the authority of Scripture, since greater is that authority than all the powers of the human mind?" Has she not sounded that sentence, in its original Latin, "*Major est Scripture auctoritas quam omnis humani ingenii capacitas*," down through all the centuries, thus overruling human reason and murdering intellectual liberty? Did she not, through her ignorance and superstition, and for the purpose of self-aggrandizement, seek to obliterate science from her dominions, by creating the crime of heresy; and did not every man, woman, or child in Christendom, who seemed to question scriptural authority in science, thereby become an heretic, and thus fall under her ban, to be by her Holy hand imprisoned, tortured; perhaps burned to death? Did she not in the year 1208 estab-

lish the Holy Inquisition with universal jurisdiction and arbitrary power, not alone over the bodies, but over the minds of men, and did not her fiendish wielding of that infamous power dethrone the reason of thousands, and send them, self-confessed criminals, to torture, to the dungeon and to the stake? Did she not, besides murdering the thousands of her obscure victims, whom she had first made mad, silence and imprison such a genius as Roger Bacon, who all historians agree was three centuries in advance of scientific reform; who knew the properties of concave and convex lenses; who was the first to conceive of the microscope and telescope; who considered the rotundity and size of the earth; who explained the cause and character of the rainbow; whose astronomical knowledge led him to demand a reform in the calendar, which Gregory XIII. carried out three centuries later; who made clocks; who had knowledge of gun-powder; who is said to have investigated the power of steam; who extracted phosphorous, bismuth and manganese; who was in fact the pioneer in the experimental method? There is no better established fact in all history than this; and yet, in utter defiance of it, in absolute disregard of authentic accounts of the Church's condemnation and ten years' imprisonment of Roger Bacon, on the charge of "Compact with Satan" and "Suspected Novelties," Dr. Walsh asserts in his answer that my statement that the medieval Church forbade the study of the physical sciences "is false." Not only this, but a reference to his book, entitled, "The Popes and Science" will disclose that he there teaches that Roger Bacon was imprisoned by the Church because, as a Franciscan Friar, he had taken the vow of poverty and broke it, by using expensive paper on which to write.²² This is the manner in which the Professor of Medical History at Fordham accounts for the Church's prosecution and imprisonment of the greatest scientist of the Middle Ages; thus, in the interest of Roman Catholicism, does he attempt to conceal the true history of one of the deadliest among the many blows which scientific endeavor received at the hands of the Roman Catholic Church.

²² "The Popes and Science.—The History of the Papal Relations to Science During the Middle Ages and Down to our own Time," by James J. Walsh, M.D., Ph.D., LL.D., Professor of the History of Medicine and of Nervous Diseases at Fordham University School of Medicine; Professor of Physiological Psychology at St. Francis Xavier's and Cathedral Colleges, New York, and Lecturer on Biology at the Catholic Summer School of America. "Dedication to Pope Pius X, Our Lady's Day, 1908." Page 328.

The story of Roger Bacon is in itself sufficient proof of my assertion, that the Medieval Church forbade the study of the physical sciences, but his sad case was not an isolated one; his persecution is typical and clearly represents the anti-scientific policy of the Roman Church. For verification of this, the pages of history of those dark days may be opened almost at random. Thus:

"In 1247, the papal legate, Otto, Bishop of Frascati, condemned Jean de Brescain for certain heretical speculations concerning light and matter; he was banished from Paris and forbidden to teach, or dispute or to live where there was a college. At the same time a certain Master Raymond, who had been imprisoned for his erroneous views, was found to be contumacious and was ordered back to prison, while, for the future, logicans were forbidden to argue theologically and theologians logically. * * * Hermann of Ryswick, in 1512, for teaching that matter is uncreated and has existed free from the beginning, was burned to death at The Hague, by order of the Inquisition."²³

Ceccus Asculanus, a famous philosopher and mathematician, physician to Pope John XXII, and subsequently to Charles Sineterrs, Duke of Calabria, having performed some experiments in mechanics, that seemed miraculous to the vulgar, was supposed to deal with infernal spirits, and was burnt to death for it by the Inquisitors at Florence in the year 1337.²⁴

"Arnold de Villeneuve, the great physician, (1234-1313) studied seven years at Montpellier, twenty years at Paris, visited all the universities in Italy, then went to Spain to levy on the Arabian authors. He wrote on medicine, theology, and especially on chemistry, in which art he obtained great renown, both as an author and teacher. To him is due the discovery of the spirit of wine, oil of turpentine, aromatic waters, besides several preparations of less note, and the introduction of chemical compounds into therapeutics. * * * He became a teacher at Bologna and physician to Peter III, of Arragon. Shortly before his demise he went to Paris, having fallen under the ban, because of a declaration that papal bulls, far from being sacredly inspired, were human

²³ Lea, "Hist. Inq.," Vol. III, pp. 561-565.

²⁴ Mossheim, "Hist. Eccl." Liber XCIV, Ch. XXXIX.

works, and that acts of charity were dearer to God than hecatombs, etc. He finally perished by shipwreck, but the spirit of fanaticism followed him after death, for his volumes were condemned by the Inquisition, because they commended experiments rather than mere speculations."²⁵

All unprejudiced authorities are agreed that this great physician and chemist was driven by the Church all over Europe, because of expressions of scientific opinions that were contrary to papal teaching, notwithstanding that his skill as a physician was sought for and obtained by Church dignities;—he was actually on his way to obey a summons of Pope Clement V., who was suffering from stone, when he lost his life by ship-wreck.

If we follow history along down, taking account of the specific decretals of the Church against individuals, we are astounded to find, according to Naudé, as quoted by White,²⁶ that "the list of great men in those centuries charged with magic includes every man of real mark, and in the midst of them stands one of the most thoughtful popes, Sylvester II. Gerbert; and the foremost of medieval thinkers on natural science, Albert the Great."

In a bull issued in 1163, by Pope Alexander III in connection with the Council of Tours, all ecclesiastics were forbidden, under penalty of excommunication, "the study of physics or the laws of the world."²⁷

"In 1243 the Dominicans interdicted every member of their order from the study of medicine and natural philosophy; and in 1287 this interdiction was extended to the study of chemistry."²⁸

Of course this attitude assumed by the Church was reflected in the action of the secular arm, thus we find Charles V. of France forbidding, in 1380, the "possession of furnaces and apparatus necessary for chemical processes," and it was under this law that the chemist, John Barrillon, was imprisoned and narrowly escaped with his life. We are informed that "in England, in 1404, under Henry IV., a similar decree was issued," and that "The Republic of Venice, in 1418, followed these examples."²⁹

²⁵ Park, "Epit. Hist. Med.," p. 88.

²⁶ "Warfare of Science," Vol. 1, p. 386, and foot-note citing authorities and documents.

²⁷ *Ibidem*, p. 386, foot-note.

²⁸ *Ibidem*, p. 389.

²⁹ *Ibidem*, p. 391, foot-note.

But, to return to the Church: She pursued the chemist and physicist relentlessly. Even after the Renaissance, we find her actively engaged in persecuting such experimenters as John Baptist Porta. This man, we are told, had written a book on meteorology, which was the first to contain sound ideas on this subject; "his researches in optics gave the world the camera obscura, and, possibly the telescope; in chemistry, he seems to have been the first to show how to reduce the metallic oxides, and thus to have laid the foundation for several important industries. He did much to change natural philosophy from a black art to a vigorous, open science." In the latter part of the sixteenth century, while conducting his experiments, he was summoned to Rome by Pope Paul III., and ordered by him to discontinue his investigations. This papal act resulted in the breaking up of a society founded by Porta for the purpose of physical research.³⁰

One of the most instructive examples of the Church's pursuit of the scientist even beyond the revival of learning, is to be found in the history of the Accademia del Cimento, which held its first meeting at Florence, Italy, in 1657, under the presidency of Prince Leopold de Medici. This academy promised great things for science; it was open to all talent; its only fundamental law was "the repudiation of any favorite system or sect of philosophy and the obligation to investigate nature by the pure light of experiment; it entered into scientific investigations with energy; Borelli in mathematics; Redi in natural history, and many others, enlarged the boundaries of knowledge. Heat, light, magnetism, electricity, projectiles, digestion, and the incompressibility of water, were studied by the right method, with results that enriched the world. The academy was a fortress of science, and siege was soon laid to it. The votaries of scholastic learning denounced it as irreligious; quarrels were fomented; Leopold was bribed with a cardinal's hat and drawn away to Rome; and, after ten years beleaguering, the fortress fell; Borelli was left a beggar; Olivia killed himself in despair."³¹ White informs us that Libri, in his *Essai sur Gallieé*, p. 37, says, "Olivia was summoned to Rome and so tortured by the Inqui-

³⁰ *Ibidem*, pp. 392-394. (Author refers to Porta's *Natural Magick*, English translation. Also to Kopp, Hoefer, Sprengel, and others.)

³¹ *Ibidem*, p. 393. (Author refers to Napier, *Florentine Hist.*, Vol. V, p. 485; also to Tiraboschi, Henri Martin, Jevous, Brewster, and Libri.)

sition that, to escape further cruelty, he ended his life by throwing himself from a window." And yet we are told by Dr. Walsh that any statement that the Church forbade the study of chemistry and physics, "is false."

Now, as to medicine: Referring to my claim, that the Church's policy was one of discouragement, hindrance, and actual prohibition of healing the sick by scientific means, the facts supporting it are so well established that all unprejudiced writers have been forced to the same conclusion. Examination of the works of such investigators as Baas, Sprengel, Buckle, Von Raumer, and the almost innumerable authors referred to by White, in the foot-notes of his work, cannot fail to convince even the most prejudiced of the truth of my assertion. While it is true that many individuals, broad-minded churchmen (among them some of the popes, like Clement III. and Sylvester II.) favored the cultivation of medical science among ecclesiastics,—the only persons likely to study it,—history shows conclusively that from the very beginning the Church opposed it; that the Christian idea, as promulgated by her, discouraged the combating of disease by reasoning methods. The theory that all sickness afflicting Christians was due to Satan, was taught and insisted upon by such controlling fathers of the Church as St. Cyril, Origen, St. Augustine, Gregory of Nazianzus, St. Nilus, Gregory of Tours, and St. Ambrose. These men, and others of equal authority, taught the sinfulness of resorting to medicine for the relief of pain, instead of to the intercession of the saints; St. Bernard, for example, in a letter to certain monks, insisted that to seek relief from disease in medicine "was in harmony neither with their religion, nor with the honor and purity of their order," and this view found its way into the "canon law which declared the precepts of medicine contrary to Divine knowledge." In this manner, the Church continued to disseminate the idea that all disease was due to supernatural causes, (mainly to diabolic power), which must be thwarted by the influence of blessed relics and charms of all kinds, such, for example, as the *Agnus Dei*; and in that way was developed the "Pastoral Medicine," which brought to her treasury untold revenue, and which for centuries so hindered natural progress of rational thought along medical lines. As an example of this, Hausser speaks of the action of Pope Leo X, who, in 1517 issued, for a certain price, tickets stamped

with a cross and bearing the following inscription, "This cross measured forty times makes the height of Christ in his humanity. He who kisses it is preserved for seven days from falling sickness, apoplexy and sudden death."³²

Besides this sort of discouragement by the early fathers, the practice of exorcising demons from the human body, the hundreds of miracles and fetish cures, and the systems of "Pastoral Medicine" referred to, we find in Church history the records of many prohibiting edicts bearing upon the study of medicine; thus, the "Council of Rheims, in the beginning of the tenth century, interdicted the study for monks; and a few years later we find decretals like those of Pope Alexander III, forbidding monks to study or practice it." "The Fourth Council of the Lateran in the beginning of the thirteenth century forbade surgical operations to be practiced by priests, deacons, and sub-deacons; and some years later Honorius III reiterated this decree and extended it. In 1243 the Dominican order forbade medical treatises to be brought into their monasteries, and finally all participation of ecclesiastics in the science and art of medicine was effectually prevented."³³

"The Lateran Council, about the beginning of the thirteenth century, forbade physicians, under pain of exclusion from the Church, to undertake medical treatment without calling in ecclesiastical advice. This view was largely cherished by the Church and nearly two hundred and fifty years later Pope Pius V revived it by renewing the command of Pope Innocent and enforcing it with penalties. Not only did Pope Pius order that all physicians, before administering treatment, should call in a physician of the soul, as he declares that '*bodily infirmity frequently arises from sin*,' but he ordered that if at the end of three days the patient had not made confession to a priest, the medical man should cease his treatment, under pain of being deprived of his right to practice, and of expulsion from the faculty, if he were a professor, and that every physician and professor of medicine should make oath that he was strictly fulfilling these conditions."³⁴

³² "Period of the Reformation," Eng. trans., p. 17.

³³ White, "Warfare of Science," Vol. II, p. 36. The author refers to Sprengel, Baas, *Geschichte der Medicin*, p. 204, and elsewhere; also Buckle, *Posthumous Works*, Vol. 2, p. 567. For a long list of church authorities who practiced a semi-theological medicine in the Middle Ages, see Baas, pp. 204-205. For clandestine study and practice of medicine by sundry ecclesiastics in spite of the prohibition of the Church, see Von Raumer, *Hohenstaufen*, Vol. VI, p. 438.

³⁴ White, "Warfare of Science," Vol. II, p. 37 (see foot-note).

In these days physicians were charged with magic, sorcery, atheism, Averroism and the like. "In the tenth century, Gerbert, afterward known as Pope Sylvester II, was at once suspected of sorcery, when he showed a disposition to adopt scientific methods, and in the eleventh century this charge nearly cost the life of Constantine Africanus, when he broke from the beaten path of medicine"; and as I observed when considering the case of Roger Bacon and others of the thirteenth century, these cases are typical of the encouragement given by the Church to the development of medical science.

Then there was the opposition of the Church to the study of anatomy. Dr. Walsh in his answer has devoted a great deal of attention to this point and has attempted to show that the decretal of Boniface VIII, so frequently referred to, was not intended to prevent anatomical investigation and study, and that it did not have that effect. Whatever may have been the intention of the pope issuing the bull, there can be no question that the consensus of historical opinion is that it was universally construed to forbid dissection, and that for centuries it did hinder the study of anatomy. The decree of Boniface undoubtedly strengthened in Christendom the Egyptian idea, already deeply rooted there, concerning the meddling with dead bodies. Pagan civilization opposed it, and so deeply seated was that opposition in Egypt that the "embalmer was regarded as accursed." To this borrowed abhorrence of the anatomist was added the orthodox Christian doctrine, that the human body must be regarded as the temple of the Holy Spirit, and subsequently the doctrine of corporal resurrection. These and similar Christian teachings seems to have laid the foundation for construing the bull as prohibiting dissection. Certain it is that a careful examination of such authorities as Hallam, Cuvier, Sprengel, Roth, and others, cited by Dr. White in support of his contention, must lead to the conclusion arrived at by him, that the bull referred to was the means of hindering for hundreds of years the proper pursuit in Christendom of the study of anatomy.

One of the most striking examples of the Church's methods of hindering the development of medical science is to be found in her prejudice against Jewish physicians and her prohibition of Roman Catholics to employ them. "Even to those who had become so far emancipated from allegiance

to fetich cures as to consult physicians, it was forbidden to consult those who, as a rule, were the best. From a very early period of European history the Jews had taken the lead in medicine; their share in founding the great schools of Salerno and Montpellier, we have already noted, and in all parts of Europe we find them acknowledged leaders in the healing art. The Church authorities, enforcing the spirit of the time, were severe against these benefactors: that men who openly rejected the means of salvation, and whose souls were undeniably lost, should heal the elect, seemed an unjust insult to Providence; preaching friars denounced them from the pulpit and the rulers in State and Church, while frequently secretly consulting them, openly proscribed them."

"Gregory of Tours tells us of an Archdeacon who, having been partially cured of disease of the eyes by St. Martin, sought further aid from a Jewish physician, with the result that neither the saint nor the Jew could help him afterward. Pope Eugene IV, Nicholas V, and Calixtus III, especially forbade Christians to employ them. The Trullanean Council in the eighth century, the Councils of Beziers and Alby in the thirteenth, the Councils of Avignon and Salamanca in the fourteenth, the Synod of Banberg and the Bishop of Passan in the fifteenth, the Council of Avignon in the sixteenth, with many others, expressly forbade the faithful to call Jewish physicians or surgeons; such great preachers as John Geiler and John Herolt thundered from the pulpit against them and all who consulted them."³⁵ The cry of the clergy against the Jewish

³⁵ White, "Warfare of Science," Vol. II, p. 44. Author, in foot-note, says: "For proofs that the School of Salerno was not founded by the monks, Benedictine or other, but by laymen, who left out a faculty of theology from their organization, see Haeser, *Lehrbuch der Geschichte der Medicin*, Vol. I, p. 646; also Baas. For a very striking statement that married professors, women and Jews were admitted to professional chairs, see Baas, pp. 208, *et seq.*; also summary by Dr. Payne, article in *Ency. Brit.* Sprengel's old theory that the school was founded by Benedictines seems now entirely given up; see Haeser and Baas on the subject; also Daremberg, *La Medicine*, p. 133. For citation from Gregory of Tours, see his *Hist. Francorum*, lib. 6. For the eminence of Jewish physicians and proscription of them, see Beugnot, *Les Juifs d'Occident*, Paris, 1824, pp. 76-94; also Bedarride, *Les Juifs en France, en Italie, et en Espagne*, Chaps. V, VIII, X and XIII; also Renouard, *Historie de la Medicine*, Paris, 1846; tome I, p. 439; also, especially, Lammert, *Volks-medicin*, etc., in *Bayern*, p. 6, note. For Church decrees against them, see the *Acta Conciliorum*, ed. Hardouin, Vol. X, pp. 1634, 1700, 1870, 1973, etc. For denunciation of them by Geiler and others, see Kotelmann, *Gesundheitspflege in Mittelalter*, pp. 194-195. For a list of kings and popes who persisted in having Jewish physicians, and for other curious information of the sort, see Professor Levi, of Verceili, *Cristiani ed Ebrei nel Medic Evo*, pp. 200-207; and for a very valuable summary, see Lecky, *History of Rationalism in Europe*, Vol. II, pp. 265-271.

physician was that, "it were better to die with Christ than to be cured by a Jew doctor, aided by the devil."

Now, having discussed the question of the Church's prohibition of the study of general medicine and chemistry, let us consider, briefly, her attitude toward hygiene and preventive medicine. The theory of the cause of pestilential disease, as promulgated and disseminated by her, was in perfect accord with her knowledge of other branches of science. Epidemics caused by filth were said by her to be due to two influences—the wrath of God and the power of Satan. Divine wrath was heralded by comets, falling stars, and earth-quakes, which, according to Scripture, were "signs and wonders," and these things foretold visitations of God's revenge in the form of famine and pestilence. Witches, through diabolic power, smeared ointments on the walls of cities, and in that manner produced epidemics of various kinds. "Living in filth was regarded by great numbers of holy men, who set an example to the Church and to society, as an evidence of sanctity. St. Jerome and the breviary of the Roman Church dwell with unction on the fact that St. Hilarion lived his whole life long in utter physical uncleanness. St. Athanasius glorifies St. Anthony because he never washed his feet; St. Abraham's most striking evidence of holiness was, that for fifty years he washed neither his hands nor his feet; St. Sylvia never washed any part of her body, save her fingers; St. Euphraxia belonged to a convent in which the nuns religiously abstained from bathing; St. Mary of Egypt was eminent for filthiness; St. Simon Stylites was in this respect unspeakable—the least that can be said is that he lived in ordure and stench intolerable to his visitors. The *Lives of the Saints* dwells with complacency on the statement that, when sundry eastern monks showed a disposition to wash themselves, the Almighty manifested His displeasure by drying up a neighboring stream until the bath which it had supplied was destroyed." ³⁶ For century after century the idea prevailed that filthiness was akin to holiness, and throughout all Christendom "faith and filth, old partners, reigned supreme." Instead of attempting, by hygienic measures, the prevention of pestilential plagues, the inspired Church counted her beads, rang consecrated bells, erected monuments to offended and angry saints, resorted to

³⁶ See Lecky, Meryon, Buckle, and others, cited by White in his "Warfare of Science," Vol. II, Chap. 14.

prayers, and processions, performed miracles, erected shrines, sought aid in relics, gathered tithes, and propitiated God and the saints by torturing, banishing, imprisoning and burning witches and Jews. Hundreds and thousands of agonized Christians suffered and perished by dysentery, sweating sickness, jail-fever, black death, small-pox and plagues of various kinds, all of which diseases the Church insisted, resulted, not from natural causes, but from the wrath of God and the malice of Satan. Who living in those days would dare to become an heretic, by disputing with divinely inspired authority the causes of disease? Is it not true that to do so would be to fly directly in the face of the Maker of the universe? May we not then conclude that hygiene has its place with medicine, physics and chemistry, among the sciences, the study of which was prohibited by the Roman Church of the Middle Ages?

When we consider the next sentence contained in my address, and Dr. Walsh's reply to it, we find the same irrelevancy and misleading evasion, the same dodging, ducking and side-stepping, which characterize his methods of controversy wherever the moral character and reputation of his Church are involved. In my address, when referring to the Church and her relation to scientific achievement, I made use of the following words:³⁷ "To relieve the pain of the throbbing nerve was thought to thwart the wish of the Almighty." To which Dr. Walsh replied: "Some form of anesthesia for surgical operations was in frequent use during the thirteenth, fourteenth, and fifteenth centuries, in Italy, as can be seen in any history of anesthesia. Ugone da Lucca invented a method of anesthesia that attracted much attention in the thirteenth century. At the end of this century the use of opium to relieve pain received a great stimulus from Simon Januensis, physician to Pope Nicholas IV."³⁸ Now, what has that to do with my statement, that, "To relieve the pain of the throbbing nerve was thought to thwart the wish of the Almighty"? The question is not whether this one or that one in history used, or attempted to use, certain drugs or methods for the relief of pain. Anybody who is at all familiar with medical lore knows that attempts at analgesia and anesthesia have been made at different periods, seemingly with-

³⁷ *Med. Lib. & Hist. Jour.*, Sept., 1906, p. 284.

³⁸ *Ibidem*, p. 284.

out reference to Ugone da Lucca, Simon Januensis and, horrible to relate, even without the "deference due" Pope Nicholas IV; that the pagan poppy, heretical henbane, and heathen hasheesh, "have been sung in poetry, rehearsed in prose and known from almost prehistoric time." The question is this: Did the Church hold and teach, that to relieve pain by natural or scientific means thwarted the wish of Jehovah, and did the attempted enforcement of that doctrine hinder scientific endeavor and achievement? For specific information on this point, let us, for example, examine, briefly, the authorities dealing with the attitude taken by the Church, both Catholic and Protestant, toward the use of the three greatest pain-relievers, opium, chloroform, and cocaine. First, as to opium: "Under the treatment of polytheistic science, opium seems to have been used to alleviate, as a usual remedy; but upon the advent of that abnormal exaltation consequent upon the religious fervor which crept through the empire during the first three centuries, the deductions of natural ratiocination were abandoned as unsafe guides, and such maladies were expressly denominated diabolical visitations, which, to cure by scientifically compounded medicaments, was regarded as profanity, and an invasion of the sacred prerogatives of the Deity." ³⁹

Now, as to chloroform: "In 1847 James Young Simpson, a Scotch physician, who afterwards rose to the highest eminence in his profession, having advocated the use of anesthetics in obstetrical cases, was immediately met by a storm of opposition. This hostility flowed from an ancient and time-honored belief in Scotland. As far back as the year 1591, Eufame Macalyne, a lady of rank, being charged with seeking the aid of Agnes Sampson for the relief of pain at the time of the birth of her two sons, was burned alive on Castle Hill in Edinburgh; and this old theological view persisted even to the middle of the nineteenth century. From pulpit after pulpit, Simpson's use of chloroform was denounced as impious and contrary to Holy Writ; texts were cited abundantly, the ordinary declaration being, that to use chloroform was to avoid one part of the primal curse on woman." ⁴⁰ Dr. Simpson persisted in his argument with Church authorities, that chloroform was a blessing instead of a curse, but made no impression on them until he quoted the

³⁹ "Hist. Med. Economy During Mid. Ages." By Geo. F. Fort. 1883.

⁴⁰ White, "Warfare of Science," Vol. II, p. 62. Author refers to Dalyll, "Darker Superstitions of Scotland," Dun's "Life of Sir James Y. Simpson." London, 1873, pp. 215-222 and 256-260. Foot-notes.

thirty-first verse of the second chapter of Genesis, which contains the record of the removal from Adam of the rib with which Eve was made, and the causing, by the Deity, of a deep sleep to fall over Adam, before the operation was undertaken.

As to cocaine: that local anesthetic which in the hands of the surgeon and ophthalmologist has prevented so much suffering, we find: "As early as the middle of the sixteenth century the value of coca" (the plant from which cocaine is obtained) "had been discovered in South America; the natives of Peru prized it highly; and two eminent Jesuits, Joseph Acosta and Antonio Julian, were converted to this view. But the conservative spirit in the Church was too strong; in 1567 the second Council of Lima, consisting of Bishops from all parts of South America, condemned it; and two years later came a royal decree declaring that, 'the notions entertained by the natives regarding it were an illusion of the devil.'"⁴¹

While the active principle of Peruvian bark is not classed in medicine as a true analgesic, every experienced physician knows how quickly and thoroughly it relieves those obstinate neuralgias depending on old malarial infections. Any discussion of the Church's position toward the relief of pain by scientific means would be incomplete if it did not mention the prohibition by Protestantism of the use of that drug. It is a well known fact, which may be verified by a reference to the authorities,⁴² that owing to the anti-Catholic feeling and sectarian resistance, the introduction of quinine into England was delayed for nearly a quarter of a century.

Now, with regard to Dr. Walsh's assertion; he seems to labor under the impression that because Ugone da Lucca "invented a method of anesthesia" or that Dr. Simon Januensis, the papal physician, at the end of the thirteenth century, did something which gave a stimulus to the use of opium for the relief of pain, or that some other physician or monk did something else along those lines, it is to be regarded as evidence, one way or the other, of the Church's policy. I submit that nothing can be further from the truth. It is the rare exception that proves the rule. Is it not true that pope after pope and council after council forbade Christians to employ Jewish physicians and

⁴¹ White, "Warfare of Science." Vol. II, p. 61. Author (foot-notes) quotes Martindale: *Coca cocaine and its salts*. London, 1886, p. 7.

⁴² White, *Ibid.*, p. 622. Author citing Russell, pp. 194; 253. Also Meyron, *Hist. Med.*, London, 1861, vol. I, p. 74.

surgeons; and still in their extremity, Bishops, Cardinals, Kings, and even Popes, insisted upon calling in physicians of the "hated race,"—connivent as to the arbitrary canons which they themselves had made, solely for the subjugation of the faithful?

The next point for our consideration is the last one of the number raised by Dr. Walsh, as set forth in his parallel columns.⁴³ In my address, I referred to the Church's prohibition of the study of astronomy, as follows: "For one thousand years in Papal Christendom the study of astronomy was considered criminal, and frequently paid the penalty of imprisonment and death." To which Dr. Walsh replies: "This is the only one of his original assertions Dr. Cruikshank chooses to defend in his answer. His defence is, of course, the well-known case of Galileo. One case of imprisonment in a thousand years; yet Dr. C—— said, '*frequently paid the death penalty.*' Galileo's 'prison' was the guest chamber of the palace of a cardinal friend. It is as if Dr. Cruikshank accused the Board of Health of permitting the ravages of an awfully fatal epidemic of diphtheria, and when challenged for proof brought one non-fatal case of very mild diphtheria, and even that one diagnosed something else, by good authorities. In ordinary modern life such a mode of procedure would raise a laugh, and thereafter no one would pay any attention to his assertions."

In taking up this point, I deem it necessary in view of the close relationship existing between astronomy and geography, and pertinent because in my address I made similar assertions concerning both, to review briefly the early history of the latter science and the Church's restrictions and prohibitions in its study. It is to Greek civilization that we owe the germ of thought which, as implanted and ripened in the brain of Aristotle, bestowed upon the world the first clear idea of the globular form of the earth. For the repeated attempts at assassination and for the burial alive for 1,500 years of that idea, we are under obligations to Christian civilization, as established by the Roman Catholic Church: for its rescue from the grave and final resuscitation, we are indebted to science. From the very beginning, the inspired Church vigorously insisted upon the dissemination throughout her dominions of the crudest ideas concerning the shape of the earth. "Among various rude tribes, we find survivals of a primitive idea that the earth is a flat table or disk, ceiled, domed or canopied by the sky,

⁴³ *Med. Lib. & Hist. Jour.*, Sept., 1906, p. 284.

and the sky rests upon mountains or pillars." This early conception is the natural result of misinterpretation of physical phenomena. It is in conformity with the appearance of things and, consequently, it entered into the barbaric system of theology, passing along down through the civilizations of Chaldea, Egypt, Persia, and Israel, resulting in the geology, astronomy, and geography "revealed" in the Mosaic account, and finally forming a large part of the foundation of the theological system of the orthodox Christian. This is geography as taught by the Church of the Middle Ages. In spite of all reason, in the very face of scientific demonstration, her inspired declarations, first, that the earth is flat, then, that it is round and the centre of the universe, were tyrannically insisted upon. Throughout all the centuries during which she held power she enforced these edicts against rational geography. Her knowledge, she declared, was superior to reason. It was based upon the authority of the Holy Scripture; and in geography, as in every other branch of science, any one disputing that authority was guilty of heresy, a crime which, as we have seen, she did not hesitate to punish with imprisonment, torture, and death by burning. While a few of the early Christian fathers were somewhat influenced by the thought of the Greeks, and were perhaps willing to accept their theories, their fear for the safety of the inspired Scriptures overcame their rationality; and so we find the sublime teachings of Aristotle concerning the shape of the earth, overwhelmingly opposed by such controlling theologians in the early Church as Eusebius, Basil of Cæsarea, Lactantius, St. John Chrysostom, Ephræm Syrus, Theophilus of Antioch, Clement of Alexandria, and others of equal influence and standing. Basing their teachings on certain passages taken from Genesis, Isaiah, and the Psalms, these holy, inspired men taught that the universe is like a house; the earth is the floor, the sky the ceiling, under which the Almighty or His angels, in the early morning, hung out the sun and, in the evening, the twinkling stars.

The promulgation by the Church of these and other childish and absurd ideas, culminated in the sixth century, in a complete system of the universe, claiming to be based upon Scripture, and given to the world by Cosmas the monk. His book was written at Alexandria, soon after 533 A. D. and is entitled, "A Christian Topography Embracing the Whole World." It is composed of several volumes, eleven or twelve in all, and the "great object of

it is to denounce the false and heathen doctrine of the rotundity of the earth and to show that the tabernacle in the wilderness is the pattern or model of the universe":⁴⁴ it is well to remember that this work was the authority in geography for the orthodox Christian up to the discovery of America by Columbus, in 1492. According to its teaching, the earth is a parallelogram, flat, and surrounded by four seas. At the outer edge of these four seas arise massive walls, closing in the whole structure and supporting the firmament or vault of the heaven, whose edges are cemented to the walls. These walls enclose the earth and all the heavenly bodies. This vast box is divided into two compartments, one above the other. "In the first of these men live and stars move; and it extends up to the first solid vault or firmament, above which live the angels, a main part of whose business it is to push and pull the sun and planets to and fro." Over the first vault, we are told, is situated a vast cistern containing "the waters" referred to in certain Biblical texts,⁴⁵ and that from this through "the windows of heaven," the earth is watered. When these windows are widely opened by the angels having charge of them, the earth receives a down-pour of rain. When they are opened a little—just a *teenty-weenty bit*—a light shower of rain is the result. As the whole work of Cosmas was filled with divinely inspired wisdom of a similar kind the theological world received it as gospel and "the great body of the faithful considered it a direct gift from the Almighty."

As we come along down the road of medieval history and reach the thirteenth century, we find that the great thinkers like Albert the Great, Roger Bacon, Vincent of Beauvais and Thomas Aquinas, seem to have felt it incumbent upon them to accept the Greek teaching concerning the earth's rotundity, but the theologians, even of a much later period, including the pioneers of the Reform movement, Luther, Melancthon, Calvin, and even Zwingli, still insisted upon the ideas set forth in the sixth century by Cosmas, so that when "Calixt ventured, in interpreting the Psalms, to question the accepted belief that 'the waters above the heavens' were contained in a vast receptacle upheld by a solid vault, he was bitterly denounced as heretical"; and even as late as the latter part of the sixteenth century, some theologians

⁴⁴ *Encycl. Brit.*, under "Cosmas," and others.

⁴⁵ "Let there be a firmament in the midst of the waters and let it divide the waters from the waters." And, "Praise Him ye heaven of heavens, and ye waters that be above the heavens."

interpreted the Mosaic account to mean that at first God made the heavens, or the vault, leaving it swinging in mid-air for three days, and then put the earth under it. These are only a few of the many teachings in geography insisted upon by papal authority. Belief in them was held by the Church to be absolutely necessary to salvation. To escape her condemnation for heresy, no doubt must be expressed concerning her doctrine that Calvary in Jerusalem was the exact centre of the earth; that on that very spot had stood the tree bearing the forbidden fruit of Eden; that hell was situated just over the edge of one of the four seas, as described by Cosmas; and, above all, it was the rankest of heresy to believe in the doctrine of the Antipodes; the Church, for more than a thousand years, "always, everywhere, and by all," insisting that there could not be human beings on the opposite sides of the earth, even if the earth had opposite sides, because the "apostles were commanded to go into all the world and preach the gospel to every creature; that they did not go to any such part of the world as the Antipodes; they did not preach to any creature there; *ergo*, no Antipodes." And again, if the earth is round, and men lived on the other side of it, how, in the day of judgment, could they see the Lord descending through the air. Nor was this the worst: "In Italy, at the beginning of the fourteenth century, the Church thought it necessary to deal with questions of this sort by rack and fagot. In 1316, Peter of Albano, famous as a physician, having promulgated this, with other obnoxious doctrines in science, only escaped the Inquisition by death; and, in 1327, Cecco d'Ascoli, noted as an astronomer, was, for this and other results of thought, which brought him under suspicion of sorcery, driven from his professorship at Bologna and burned alive at Florence. Nor was this all his punishment: Orcagua, whose terrible frescoes still exist on the walls of the Campo Santo at Pisa, immortalized Cecco by representing him in the flames of hell." ⁴⁶ As an example of the manner in which this opposition to geography descended from the older to the protesting branch of the Church, I beg to submit the following: "In the year 1533, Michael Servetus, the physician, was on trial for his life, on the charge of Arianism. Servetus had rendered many services to scientific truth, and one of these was an edition of Ptolemy's Geography, in which Judea

⁴⁶ White, "Warfare of Science," pp. 106-107. Author refers in foot-notes to Tiraboschi, Ginguene, Naude, Montucla, Daunou, Kretschmar and Renan.

was spoken of, not as a land flowing with milk and honey," but, in strict accordance with the truth, as, in the main, meagre, barren and inhospitable. In his trial, this simple statement of geographical fact was used against him by his arch-enemy, John Calvin, with fearful power. In vain did Servetus plead that he had simply drawn the words from a previous edition of Ptolemy; in vain did he declare that his statement was a simple geographical truth, of which there were ample proofs; it was answered that such language "necessarily inculpated Moses and grievously outraged the Holy Ghost."⁴⁷ Servetus, for this and other heresies, was burned to death, at Geneva, by Calvin, October 27, 1533.⁴⁷ He was roasted for two hours in the flames of a slow fire, "begging for the love of God, that they would put on more wood, or do something to end his torture."⁴⁸

Such was the geography of the Church; it was the geography of the Pentateuch, the Psalms, the Prophecies, the Gospels, the Epistles, and the writings of the saints—Augustine, Gregory, Ambrose, Basil, Jerome and Chrysostom; the same patristic geography with which the Council at Salamanca confuted the doctrine of Columbus and which made him fear that "instead of receiving aid as a discoverer, he should fall into trouble as a heretic;"⁴⁹ the same that for centuries prevented the birth of trade and commerce, and thus retarded for fifteen hundred years the progress and civilization of the whole world.

Now let us return to astronomy. Is my assertion true, that "for one thousand years in papal Christendom the study of astronomy was considered criminal and frequently paid the penalty of imprisonment and death"? Dr. Walsh, as we have seen, says that my statement "is false" and he tells us that "Gallileo's case was an incident and not a portion of a set policy?" Let us examine this. As in geography, the Middle Age Church had no conception of the truth concerning the heavenly bodies. Her astronomy was a mixture of Eastern mythology, Hebrew "revelation" and Christian ignorance and superstition. Some of the early fathers of the Church, Origen, for example, thought that the stars were living beings possessed of souls. They based that belief on the "scriptural vision of the morning stars singing

⁴⁷ White, "Warfare of Science," vol. I, p. 113, who says in foot-note: "For Servetus's geographical offences, see Rilliet, *Relation du Procès Criminal contre Michel Servet d'après les documents originaux*, Geneva, 1884, pp. 42, 43. Also, Willis, "Servetus and Calvin," 1877, p. 325.

⁴⁸ Draper, "Int. Dev. Europe," vol. II, p. 226.

⁴⁹ Draper, "Int. Dev. of Europe," vol. II, p. 161.

together." Others of them believed that the stars were the residences of the angels and that they were moved about from place to place, according as it suited the in-dwellers, or at the command of the Deity. Then again it was thought that the stars were only spirits under the control of the angels. As to the heavens, in general, the prevailing view of the Church was based upon the scriptural declarations that a solid vault, "a firmament," was extended above the earth and that the heavenly bodies were simply lights hung within it. This was for a time held very tenaciously. St. Philastrius, in his famous treatise on heresies, pronounced it a heresy to deny that the stars were brought out by God from His treasure house and hung in the sky every evening; any other view he declared "false to the Catholic faith." This theory, for the most part, was comprised in the system of Cosmas, to which I referred when discussing geography, and as his astronomy was also based upon the authority of the scriptures, it remained orthodox Christian until it was supplanted by the geocentric theory, the doctrine that the earth is the center and that the sun and planets move around it. This theory stood for centuries. To attack it was blasphemy. "Great theological men of science, like Vincent of Beauvais and Cardinal D'Ailly, devoted themselves to showing, not only that it was supported by scripture, but that it supported scripture. Thus was the geocentric theory embedded in the beliefs and aspirations, in the hopes and fears, of Christendom, down to the middle of the sixteenth century."

Now up to this time, in the matter of astronomy, as in all other branches of science, the Church had complete possession of the field. She brooked no interference. To challenge or dispute her authority, or to even *think* it could be wrong, was heresy. To be by her ultimately convicted of that heinous crime, meant death of body and soul. Secure in her impregnable position, fortified on all sides by the structure of superstition she had raised, living in luxury out of her treasury of salvation, she wielded, for centuries, a despotic power greater than any in the world's history. She had taken possession of this world and of the world to come. At her will, she was able to bestow everlasting life, or to inflict eternal torment. The keys of heaven and hell were in her keeping. Was there a man brave enough in all the world to openly express the opinion that this divinely

inspired institution, presided over by the "Vicar of God on earth," was mistaken in her knowledge of astronomy?

Although the heliocentric theory, the idea of the movement of the earth about a central fire, had been suggested hundreds of years before Christ by the Greeks—Pythagoras, Philolaus, Aristarchus, and others—"it was not until the fifth century of our era that it timidly appeared in the thoughts of Martianus Capella; then it was lost sight of for a thousand years until in the fifteenth century, distorted and imperfect, it appeared in the writings of Cardinal Nicholas de Cusa. But in the shade cast by the vast system which had grown from the minds of the great theologians and from the heart of the great poet (Dante), there had come to this truth neither bloom nor fruitage." But the hour came when the sombre shadow of the Church was dispelled by the fostering light of science and this budding truth burst into glorious blossom. The herald of the dawn was—Nicholas Copernicus. It was this modest, unassuming scholar who, in 1543, revealed to the "inspired" Church the error of her ways. This obscure Pole, this quiet thinker, first fairly set before the world the truth—that the sun and planets do not revolve about the earth, but that the earth and planets revolve about the sun. Now what did the Church do? How did the world's guardian of morals, faith and learning, receive this great scientific truth? From fear of her injustice and cruelty it had to be started on its ennobling mission, prefaced with a groveling, cringing, crawling lie. Copernicus had been a professor at Rome. He was a physician, philosopher, mathematician, and astronomer. As early as the year 1500 he became convinced that the Church was all wrong in her astronomy, but for obvious reasons he did not dare mention the fact, except, perhaps, to a few intimate friends. As these anti-theological ideas gradually took possession of his mind, he became more and more convinced that Rome was not a safe place for him, and so he returned to his native town in Poland, and there for thirty years he quietly continued to pursue his investigations. Finally, after some years of fear and hesitation, he determined to make a strong effort to give his theory to the world. But how was this to be accomplished? He dared not send his manuscript to Rome, for he knew that the Church there would seize and destroy it. He dared not send it to Wittenberg, because there the Protestant Church rulers were equally hostile; and so he sent it to his friend Osiander at

Nüremberg, entrusting the printing of it to him; and in due time Osiander published the book, but *not as a truth*. He did not dare to do that. He knew that an act of such audacity would result in the Church's confiscation of the work, and certainly in the imprisonment, probably in the murder by her, of both himself and his friend Copernicus. He, therefore, wrote for it a preface, in which he declared that its author had propounded the doctrine of the earth's movements, not as a fact, but as a mere *hypothesis*; that this theory was simply an indulgence of the author's imagination, and that, therefore, it could not be held unlawful. Thus was Osiander compelled to resort to deceit and perjury, and the pure current of truth was again impeded and contaminated by the machinations of the Church. Well, what next? In the year 1534, on the day of his death, the book *Revolutions of the Heavenly Bodies*, written by Copernicus, appeared. In the year 1616 the Copernician system was condemned by Pope Paul V. This papal ban was removed by Pope Pius VII in the year 1821. Fourteen years later, namely, in 1835, was issued the first edition of the *Index* which did not contain the condemnation of all books defending the double motion of the earth. Thus it will be seen that for two hundred and seventy-eight years after the death of Copernicus the Church insisted that his system was false, heretical and blasphemous, and that the old Biblical astronomy was true. From the death of Constantine, the first Christian emperor, A.D. 337, to the removal of the papal ban against the Copernican system by Pius VII, in 1821, is fourteen hundred and eighty-four years, during all of which time the Church resisted and fought, with every means within reach, all attempts at astronomical achievement which in anywise conflicted with her interpretation of the Biblical account; and she denounced, threatened, condemned or destroyed, as heretics, all those who dared to dispute her authority. This is a matter of history and record. Thus it would seem that my assertion that "for one thousand years in papal Christendom the study of astronomy was considered criminal" is not, as Dr. Walsh tells us, a "false statement," but, on the contrary, a true one.

Now is it a fact, as I observed, that the crime of heresy in astronomy "frequently paid the penalty of imprisonment and death"? Dr. Walsh, in referring to this assertion, says: "This is the only one of his original statements Dr. Cruikshank chooses to defend in his answer. His defense is, of course, the well-

known case of Galileo. One case of imprisonment in a thousand years; yet Dr. C. said frequently paid the death penalty." What does Dr Walsh mean by this? What does he mean by his remarkable use in this connection of the words, "One case of imprisonment in a thousand years"? Does he resort to the implication that Galileo's case is the only one? Is he willing to have it appear to certain of his readers that no astronomers, other than Galileo, were persecuted and imprisoned by the Church? Or is it possible that the Professor of History at Fordham is unfamiliar with the facts? In the light of his implication, is not the latter conclusion by all odds the more charitable? He must know that, in referring to the Church's prohibition of astronomical investigation, I selected, for illustration merely, the case of Galileo because, as Dr. Walsh himself says, it is "well known," and not, as he seems to imply, because it is the only case of the kind that can be cited. "One case of imprisonment in a thousand years," says Dr. Walsh. So, then, Galileo was really imprisoned, after all! Well, well, well, how strange! I wonder from what source I could have received the impression that he was just having a good time, spending a holiday with a "Cardinal friend"? And so Dr. Walsh says Galileo was imprisoned; would it not be interesting if Dr. Walsh would only tell us by whom and for what? Who could have done such a thing? Certainly it was not the Church; we know she could not have done it, because Dr. Walsh has told us that the "proper study of astronomy was always encouraged by the popes and all other clerical authorities." Who, then, could have imprisoned Galileo? Maybe Dr. Walsh will tell us, because, you know, he has already been kind enough to relate a similar "incident" in the life of another scientist, Roger Bacon, who was in some mysterious way—somehow—by somebody—imprisoned for ten years on bread and water for having written on writing-paper. Maybe Galileo wrote on paper, too. Worse than that! Maybe he used ink! Who can tell? A man who was so unorthodox as to demonstrate with his telescope that there are mountains on the moon and spots on the sun might be guilty of the additional crime, in recording an account of his investigations, of using both ink and paper! In fact, wouldn't a man guilty of proving the truth of the Copernican system commit almost any crime?

Now, when I said of astronomers that they frequently paid the penalty of imprisonment and death, the word "frequently"

was, of course, used relatively. It did not occur to me that any one would construe my observation to mean that they were imprisoned, tortured and burned by the Church wholesale, as were those, for example, accused of witchcraft. In the sixteenth century, says Lea, "Christendom seemed to have grown delirious; and Satan might well smile at the tribute to his power, seen in the endless smoke of the holocausts which bore witness to his triumph over the Almighty. Protestant and Catholic rivaled each other in the madness of the hour. Witches were burned no longer in ones and twos, but in scores and hundreds. A bishop of Geneva is said to have burned five hundred within three months, a bishop of Bamberg six hundred, a bishop of Würzburg nine hundred; eight hundred were condemned, apparently in one body, by the Senate of Savoy. Paramo boasts that in a century and a half from the commencement of the Sect, in 1404, the Holy Office had burned at least thirty thousand witches."⁵⁰ Now, of course, in the light of these figures it is easy to realize that my use of the word "frequently" would not meet Dr. Walsh's orthodox conception of that word, as applied to burnings and the like; but I would not for a moment have it appear that the Church did not acquit herself as successfully as conditions permitted; on the contrary, she did her best; all that was lacking was a greater number of astronomers to burn. The reason for this lack of opportunity is that while witchcraft was a product of ignorance fostered by the ruling power that was, astronomy was a matter of enlightenment, hindered and hampered by that same power. Thus it will doubly appear that the Church's seeming failure should not be attributed to negligence; further statistics would show that the *percentage* of persecutions is quite as creditable to her in the matter of astronomy as in that of witchcraft; investigation clearly demonstrates that divinity, as represented by her, was by no means oblivious of the existence of the astronomer, but gave to him his full quota of beneficent attention. There, for example, was the astronomer Cecco d'Ascoli, previously mentioned, who was burned to death by the Church at Florence in 1327. Following him beyond the grave, the frescoes of Orcagua placed d'Ascoli in the flames of hell. Then came the great Copernicus, whose intimidation by the Church delayed for thirty-odd years the birth of his book *De Revolutionibus*, which, as we have seen, to appease the wrath of ecclesiasti-

⁵⁰ Lea, "Hist. Inq.," vol. III, p. 549.

cism, was finally published as an hypothesis instead of a truth; and thus, like a branded criminal, was it ushered into the world, only to be condemned by the Church and placed by her on the *Index*, where she held it fast until the year 1835; —Copernicus, whose timely death deprived the stake of a victim, the Church 'of one more opportunity to show her zeal;—Copernicus, whose grave, for thirty years, dare make no mention of his discovery. Then follows Giordano Bruno, astronomer and teacher, born in Italy in 1550 A.D., seven years after the death of Copernicus. He wrote the "*Infinity of the Universe and of Worlds*;" "*The One Sole Cause of Things*;" and was the author of other scientific works. He collected for the use of other astronomers all the observations he could find respecting the new star that suddenly appeared in Cassiopeia, A.D. 1572; and himself made many astronomical investigations. We are informed by Professor Draper that he was originally intended for the Church. He had become a Dominican, but was led to doubt by his meditations on the subject of transubstantiation and the immaculate conception. Not caring to conceal his opinions, he soon fell under the censure of the spiritual authorities, and finding it necessary on that account to leave his home, sought refuge successively in Switzerland, France, England and Germany. "The cold-scented sleuth-hounds of the Inquisition followed his track remorselessly and eventually hunted him back to Italy. He was arrested in Venice and confined to the Paimbi for six years, without books, or paper, or friends. On the demand of the spiritual authorities he was removed from Venice to Rome and confined in the prison of the Inquisition, accused not only of being a heretic, but also a heresiarch, who had written things unseemly concerning religion, the special charge against him being that he had taught the plurality of worlds, a doctrine repugnant to the whole tenor of scripture and inimical to revealed religion, especially as regards the plan of salvation. After an imprisonment of two years he was brought before his judges, declared guilty of the acts alleged, excommunicated, and, on his nobly refusing to recant, was delivered over to the secular authorities to be punished 'as mercifully as possible without the shedding of blood,' the horrible formula of burning a prisoner at the stake. Knowing well that though his tormentors might destroy his body, his thoughts would still live among men, he said to his judges: 'Perhaps it is with greater fear that you pass the sentence upon me than I receive it.' The

sentence was carried into effect and he was burned at Rome, February 16th, A.D. 1600.”⁵¹ Chained, solitary, but serene, scorning the Church’s barter—liberty for perjury—unmoved midst flame and fagot, preferring torture and annihilation to life with sullied soul, sustained by no expectation of future reward, “the most perfect martyr that ever suffered death”—behold Giordano Bruno.

Before referring to the “well-known” case of Galileo, for the purpose of showing the spirit of the times, I desire to recall a somewhat similar instance of persecution, mentioned by Dr. White. In discussing the manner in which the Church had terrorized Galileo into submission, he says: “What the Inquisition was he knew well. He could remember as but yesterday the burning of Giordano Bruno; * * * he could remember, too, that only eight years before this very time, De Dominus, Archbishop of Spelatro, having been seized by the Inquisition for scientific and other heresies, had died in a dungeon, and that his body and his writings had been publicly burned.”⁵² Then there was Tomaso Campenella⁵³ (1568-1639), who was persecuted, imprisoned, and tortured for certain writings, among which was his *Apology for Galileo*; and, further, the hampering of the great astronomer, Johann Kepler, and the placing on the *Index* of his “Epitome of the Copernican System,” as referred to by Draper.⁵⁴ Indeed, the history of astronomy, especially that of the sixteenth and seventeenth centuries, is everywhere blurred by the Church’s hindrances, intimidations, imprisonments and tortures.

Now, as to the case of Galileo. In a previous contribution,⁵⁵ I set forth many of the important facts bearing upon his persecution and imprisonment by the Church. I then recalled to the attention of my readers the fact that in 1615 A. D., Galileo was summoned before the Inquisition at Rome, and again, in 1616, by a special order of the then reigning pontiff, Paul V, under an accusation of having taught that the earth moves round the sun, a doctrine “utterly contrary to the scriptures”; and ordered to renounce that heresy on pain of being imprisoned, and further ordered to desist from teaching and advocating the Copernican theory, and to pledge himself that he would neither

⁵¹ Draper, “Religion and Science,” pp. 177-180.

⁵² White, “Warfare of Science,” vol. I, p. 143.

⁵³ *Ibidem*, vol. I, p. 153. Also *Ency. Brit.* (under “Campuella”).

⁵⁴ “Religion and Science,” p. 281.

⁵⁵ *Med. Lib. & Hist. Jour.*, March, 1906.

publish nor defend it for the future. Forced by the Church into this false position, Galileo remained silent, continuously investigating, however, for sixteen years, when, in 1632, he again ventured a vindication of the Copernican system, in the form of a publication entitled "The System of the World." He was again summoned before the Inquisition at Rome, where he was accused of having asserted that the earth moves round the sun, threatened, menaced with torture by the express order of the then reigning pontiff, Urban VIII ("the Inquisition referring in this whole matter to papal authority") and forced at last to pronounce, publicly, his recantation, as follows: "I, Galileo, being in my seventieth year, being a prisoner, and on my knees, and before your Eminences, having before my eyes the Holy Gospel, which I touch with my hands, abjure, curse, and detest the error and the heresy of the movement of the earth." The Church then compelled him to swear that he would denounce to the Inquisition any other man of science whom he should discover to be supporting the "heresy of the motion of the earth," committed him to prison for the remaining ten years of his life, and at his death refused him burial in consecrated ground. For proof of these assertions, I referred my readers to the multitude of authorities cited by Dr. White, including "the trial documents in the Vatican library, honestly published for the first time by L'Epinois, in 1867, and since by Gebler, Berti, Favaro, and others." To this Dr. Walsh replies, citing as his authority the perpetual secretary of the Paris Academy of Sciences, M. Bertrand, "Galileo's case was an incident and not a portion of a set policy." Now, here, for the second time, in this discussion, we have presented to us the expression of a difference of opinion between Dr. Walsh and infallibility. Some of my readers may perhaps recall that in interpreting the bull "*Super illius specula*" Dr. Walsh occasionally differed as to the intent and meaning, from the inspired author of that document; and now we observe that it is Pope Paul V, Pope Urban VIII, and other eminent ecclesiastical authorities, including "one of the greatest theologians in the world," Cardinal Bellarmine, who are in error. It must, for the present, remain mere conjecture as to how long the powers that be will tolerate, without resorting to radical measures, the expression by Dr. Walsh of opinions concerning the various acts of his Church and papal authority, which are diametrically opposed to the teachings of intelligent

Catholics; but we may be sure that in the times which we are now discussing, such heretical statements as that "Galileo's case was an incident and not a portion of a set policy," would be met by the stake, and, perhaps justly so, because unless the Church really believed in her cause—unless she can prove, concerning her burning of Bruno, and her imprisonment of Galileo, that she then supposed those acts were based upon the authority of the scriptures—unless she can show that they were part of a set policy, although a mistaken one—she becomes, in the eyes of the whole world, a monster—a wanton savage. If Dr. Walsh chooses to place his Church in that position, he must make his apologies and explanations to her; but as to Galileo's case being "an incident and not a portion of a set policy," so far from the truth is that statement, that all the documentary evidence contained in the Vatican library bearing upon the question, is against it, and this is shown by the manner in which sincere Roman Catholics now decline to interpose such a defense of the Church's treatment of Galileo as the "incident" story. At first, the apologists said that Galileo "was condemned, not because he affirmed the motion of the earth, but because he supported it from scripture." When this excuse failed of proof, they resorted to the statement that Galileo was condemned, not for heresy, but for contumacy—"want of respect toward the pope"—but when it was shown that Galileo, as Castelli had said, was most respectful, submissive, and patient, under the papal arguments and exactions, still another tack was taken. They then said that the "persecution of Galileo was the result of a quarrel between Aristotelian professors on one side and professors favoring the experimental method on the other"; and when this argument was effectually disposed of, it was asserted that the condemnation of Galileo was "provisory." This was at once disproved by documentary evidence, and still another defence was set up. It was declared that even if the Church did condemn Galileo, the Protestant as well as the Catholic branch was responsible, and that the pope was influenced in his action against him, more by Protestants than by Catholics. "But if Protestantism could force the papal hand in a matter of this magnitude, involving vast questions of belief and far-reaching policy, what becomes of "inerrancy," of "special protection and guidance of the papal authority in matters of faith." After this it seemed necessary to slander Galileo and therefore his private life and

character were assailed, and other similar sophistries freely indulged in, but all to little or no purpose. Then a new gun was brought into action and this new strategy is instructive. "The original documents of the Galileo trial had been brought during the Napoleonic conquests to Paris; but in 1846 they were returned to Rome by the French government, on the express pledge by the papal authorities that they should be published. In 1850, after many delays on various pretexts, the long-expected publication appeared. The personage charged with presenting them to the world was Monsignor Marini. This ecclesiastic was of a kind which has too often afflicted both the Church and the world at large. Despite the solemn promise of the papal court, the wily Marini became the instrument of the Roman authorities in evading the promise. By suppressing a document here, and interpolating a statement there, he managed to give plausible standing-ground for nearly every important sophistry ever broached to save the infallibility of the Church and destroy the reputation of Galileo."⁵⁶ This defence of the Church by Marini enabled the apologists for a time to recover their retreat, but "some time later came an investigator very different from Monsignor Marini. This was a Frenchman, M. L'Epinois. Like Marini, L'Epinois was devoted to the Church, but unlike Marini, he could not lie. Having obtained in 1867 access to the Galileo documents at the Vatican, he published several of the most important without suppression or pious-fraudulent manipulation. This made all the retrenchments based upon Marini's statements untenable. Another retreat had to be made."⁵⁷ The next defense interposed was to the effect that the popes, *as popes*, had never condemned either the Copernican theory or Galileo; that they had condemned them simply as men, and that therefore the Church had never been committed to the condemnations; that it was the cardinals of the *Index* and Inquisition who really did the condemning "and that the pope had evidently been restrained by interposition of Providence from signing the decrees." But as the official account of the condemnation, given by Cardinal Bellarmine in 1616 distinctly shows that it was made "in the name of His Holiness the Pope"; and as Pope Urban VIII and Pope Paul V, the Church authorities of the seventeenth

⁵⁶ White, "Warfare of Science," vol. I, p. 162. Author in foot-note refers to original trial documents copied carefully from the Vatican manuscripts by L'Epinois, Roman Catholic Authority.

⁵⁷ *Ibid.*, vol. I, p. 163. Author refers in foot-notes to L'Epinois.

century, had acknowledged them; and as Pope Alexander VII in 1664, in his bull *Speculatores*, solemnly sanctioned the condemnation of all books affirming the earth's movements; and, as Roman Catholic authority, such for example as Father Lecarze, Rector of the College of Dijon, positively contradicted these theories and declared that "it was not the Cardinals but the supreme authority of the Church" that had condemned Galileo; and as the Roman *Index* for nearly two hundred years had condemned the Copernican theory, declaring that "all books which affirm the motion of the earth" are damnable, there was nothing left for the apologists but final retreat. Thus it will be seen that Dr. Walsh is only one of a large array of counsel who have, at different times, appeared; and that all sorts of arguments have been variously used, in defense of the Church's persecution and imprisonment of Galileo. However, it is interesting to note that among the cultured and unprejudiced Roman Catholics no such sophistic quibble as that Galileo's case was a mere incident is now indulged in. White has so clearly demonstrated this fact that I venture to give, regarding it, his exact language, as follows: "In 1870, a Roman Catholic clergyman in England, the Rev. Mr. Roberts, evidently thinking that the time had come to tell the truth, published a book entitled "The Pontifical Decrees against the Earth's Movement," and in this exhibited the incontrovertible evidences that the papacy had committed itself, and its infallibility, fully against the movement of the earth. This Catholic clergyman showed from the original record, that Pope Paul V, in 1616, had presided over the tribunal condemning the doctrines of the earth's movement, and ordering Galileo to give up the opinion. He showed that Pope Urban VIII, in 1633, passed on, directed and promulgated the final condemnation, making himself in all these ways responsible for it. And finally he showed that Pope Alexander VII, in 1664, by his bull *Speculatores Domus Israel*, attached to the *Index*, condemning "all books which affirm the motion of the earth" had absolutely pledged the papal infallibility against the earth's movement. He also confessed that under the rules laid down by the highest authorities in the Church, and, especially by Sixtus V and Pius IX, there was no escape from this conclusion."⁵⁸ And yet we

⁵⁸ White, "Warfare of Science," vol. I, p. 156, who says in foot-note: "For this crushing answer by two eminent Roman Catholics to the sophistries cited, an answer which does infinitely more credit to the elder Church than all the perverted ingenuity used in concealing the truth or breaking the force of it. See Roberts and Sir George Mivart already cited."

are told by Dr. Walsh that "Galileo's case was an incident and not a portion of a set policy." Exactly what does Dr. Walsh mean by "incident"? Does he so freely admit the fallibility of Church and pope that he wishes us to consider the treatment of Galileo a mere whim, a kind of chance blunder perhaps? The most unsparing critic would not be so uncharitable as that. Or can it be possible that Dr. Walsh expects us to ignore the difficulties of Copernicus, the burning of Bruno and the long line of condemnations and prohibitions that followed the publishing of the "System of the World," facts which of course are not at all consistent with the case of Galileo as a mere "incident"? He could scarcely hope that these things would be overlooked or that we could believe him ignorant of them. Or does Dr. Walsh seek to belittle the punishment of Galileo? Perhaps that is his intention since he lays stress on the fact that his prison was the "palace of a cardinal friend." Granted that it was—for a time—was it any less a prison? Was it nothing that this great scientist after having yielded to the heavy exactions of the Church, frightened by the dread fate of Bruno into turning traitor to his own splendid intelligence, recanting miserably—if pitifully—in lies, must be punished still further? Was it nothing that this old man broken in health, humiliated to the last degree, wretched in body and soul, must be denied the comfort of human intercourse? Was it nothing that he must not be visited by his friends—until, indeed, he was blind and could not see them? Was it nothing that the relentless tyranny of the Church should not then be content but must prohibit his speaking or writing of his theory and leave him with the dread that his splendid discoveries were to perish with him—must add this mental imprisonment, this torture of the mind? It is difficult to understand how even the atmosphere of a Jesuit institution should so dull the natural instinct for freedom that the case of Galileo should seem a mere "incident." No, it was not an incident: it was a measure which the Church deemed necessary for her preservation: moreover, had it been a solitary instance, the lightest punishment inflicted upon Galileo on the charge brought against him, put the Church on record for all time.

Now I submit that if further proof were required that the Church of the Middle Ages, hindered, hampered, and prohibited science, it lies in this demonstrable fact: namely, that the progress which has been made in the educational world has not altered, in

the slightest degree, her real attitude toward scientific achievement. Her policy in that respect is just as prohibitory as it was, the difference being that science, after centuries of warfare, by wresting from her holy hand, the sword, thumb-screw, rack, chain and fagot, has finally deprived her of the power to enforce her edicts. Science has extracted the serpent's fangs, but the hissing and wriggling still continue. Let us see if this is true. Allow me to quote, on this point, a few passages from "The Dogmatic Constitution of Catholic Faith," as handed down in 1870, under Pope Pius IX: "Hence all the Christian faithful are not only forbidden to defend, as legitimate conclusion of science, those opinions which are known to be contrary to the doctrine of faith, especially when condemned by the Church, but are rather absolutely bound to hold them as errors wearing the deceitful appearance of truth." And again: "Let him be anathema, who unblushingly affirms that besides matter nothing else exist."

"Who does not acknowledge that the world and all things which it contains were produced by God out of nothing.

"Who shall say that man can and ought to, of his own efforts, by means of constant progress, arrive at last, at the possession of all truth and goodness."

"Who shall refuse to receive, for sacred and canonical, the books of Holy Scripture in their integrity, with all their parts, according as they are inspired by God."

"Who shall say that human reason is in such wise independent that faith cannot be demanded of it by God."

"Who shall say that divine revelation cannot be rendered credible by external evidences."

"Who shall say that no miracles can be wrought, or that they can never be known with certainty, and that the divine origin of Christianity cannot be proved by them."

"Who shall say that divine revelation includes no mysteries, but that all dogmas of faith may be understood and demonstrated by reason duly cultivated."

"Who shall say that human sciences ought to be pursued in such a spirit of freedom that one may be allowed to hold as true their assertions, even when opposed to revealed doctrine."

"Who shall say that it may at any time come to pass, in the progress of science, that the doctrines set forth by the Church

must be taken in another form than that in which the Church has ever received and yet receives them."

Having read these abstractions, let the reader also examine carefully, the recent encyclical letter on "Modernism" to which I have called his attention, if he would have further knowledge on the point under consideration. Let me here give just one quotation from that twentieth century papal document. On page 400 of that letter, as published by the *Catholic Mind*, under the auspices of *The Messenger*, Fordham University, we find that certain "remedies" for the cure of "modernism" are prescribed by the sovereign pontiff. He ordains that, "scholastic philosophy be made the basis of the sacred sciences," and especially the philosophy of St. Thomas Aquinas. "Apply yourselves energetically to the study of natural sciences," he continues, "but this do without interfering with sacred studies." And on page 402, under a subdivision of the subject "Remedies" entitled "Practical Application," is the following:

"All these prescriptions, and those of our predecessor, are to be borne in mind, whenever there is question of choosing directors and professors for seminaries and Catholic Universities. Anybody who in any way is found to be imbued with "Modernism" is to be excluded without compunction from these offices, and those who already occupy them are to be withdrawn. The same policy is to be adopted toward those who favor modernism, either by extolling the modernists or excusing their culpable conduct, by criticising scholasticism, the Holy Father, or by refusing obedience to ecclesiastical authority in any of its depositaries; and toward those who show a love of novelty in history, archæology, biblical exegesis, and, finally, toward those who neglect the sacred science or appear to prefer to them the profane."

By this papal decree on "Modernism" the instructors and professors in all Roman Catholic institutions of learning are ordered by the Church back to the dark ages; back to the philosophy of Thomas Aquinas, who taught the most absurd superstitions of his day, including the power of "Incubi and Succubi"; who insisted that comets portend war, pestilence and the revolution of kingdoms; who says in his *Summa* that it is a dogma of faith that demons can produce wind, storms, rain, and fire from heaven; who taught that the ringing of consecrated and baptized bells is "the best and foremost means of frustrating the atmospheric mischief of the devil"; who declared that insanity is caused by diabolic possession. These are only a few of the superstitious teachings of St. Thomas, whose philosophy is prescribed by the present reigning pontiff, Pius X. (It is interesting to recall that the merciless logic of that medieval philosopher re-

sulted in the burning of so many thousand victims of the Church that he was called the "Angelic Doctor.") He it was who more than any other man of the Middle Ages was responsible for the arrest of all scientific progress.

This decree on "Modernism" threatens the Professor of History in Fordham University with dismissal, if he shows a "love of novelty in history, or criticises scholasticism or the Holy Father." Again, it says to him: "If you neglect the sacred sciences, or even appear to prefer to them the profane," you will lose your present position as Dean of Fordham, and your disobedience will be borne in mind "whenever there is a question of choosing professors for seminaries and Catholic universities." It tells him that he must not, under the severest penalties, "refuse obedience to ecclesiastic authority in any of its depositaries," thus depriving him of the right to teach science, if that teaching conflicts with the doctrine of the miracle.

"The Dogmatic Constitution" insists on the admission of this postulate, "that the Roman Church acts under a divine commission, especially and exclusively delivered to it. In virtue of that great authority it requires of all men the surrender of their intellectual convictions, and of all nations the subordination of their civil power." By insisting on the promulgation of its dogma "that the world and all things in it were produced by God out of nothing" it disposes of the scientific teaching of the indestructibility of matter. It completely denies the well-established laws of evolution by bluntly declaring that the Church believes in distinct creative acts. It declares that the man "who shall say that human science ought to be pursued in such a spirit of freedom that one may be allowed to hold as true their assertions even when opposed to revealed doctrine," shall be cursed. Further analysis shows that it not only forbids all Roman Catholics to accept the teachings of science whenever they are condemned by orthodox Christian dogma, but, under threat of excommunication and the papal curse, they must hold such teachings in absolute error. By the flood of evidence are we not constrained to the conclusions:

(1) That this "Dogmatic Constitution" and "Encyclical Letter" are reiterations of the Church's medieval policy, cleverly disguised to suit the times.

(2) That the terms "modernism" and "modernist" here

used by the reigning pontiff are, respectively synonyms for "heresy" and "heretic."

(3) That while the penalties prescribed do not provide for robbing the "modernist" of life by the drastic measures of medievalism—imprisonment, torture and burning—they insidiously go as far as the Church dare toward his ruin by depriving him of the *means* of livelihood here, and ostracising him from the society of the faithful, both here and hereafter.

But if our conclusions are erroneous, will the erudite Dean of Fordham University be kind enough to correctly interpret for us the two documents above referred to?

Only I beg of Dr. Walsh that he will not attempt to do this by telling us that Roger Bacon was imprisoned for using expensive stationery; that Pope Calixtus didn't interfere with Halley's comet; that Pope John XXII said what he didn't mean—and meant what he didn't say; that the thirteenth century gave us everything worth living for; that Copernicus attended church every Sunday; that Vesalius went to the Holy Lands for his health, and that the wicked Reformation failed to seduce him; that "when Paracelsus came to die he left his money mainly to the shrine of the Blessed Virgin in his native town, Einsiedeln, and for masses for his soul;"⁵⁹ that at Fordham they teach this, that or the other in a different manner from what this, that or the other is taught in any other college in America; that Doctor So-and-So was physician to Pope Such-and-Such; we know all this because "He himself hath said it." And we know also that the popes, *as popes*, persecuted physicians for heresy, but that the popes as *sick men*—suffering from stone in the bladder, for example—were sufficiently broad-minded to believe that a cystotomy or lithotrity could be performed about as well by a physician whom the Church had billeted for a rapid run to hell as by one labelled for a slow, tedious and expensive journey in the other direction. These things we know, and therefore we will not presume further on Dr. Walsh's time concerning *them*; but we would be greatly indebted to him if he would favor us with a proper interpretation of the relation of the "Dogmatic Constitution" and the "Encyclical Letter" to scientific achievement.

Now, having finished the consideration of Dr. Walsh's main argument, there remains in his reply one or two additional points which seem to require passing comment. Dr. Walsh, in closing

⁵⁹ According to all accounts he needed them. (See Park, "Epit. Hist. Med.," p. 143.)

his remarks, says: "Dr. Cruikshank suggests in his answer that I may have his paper put on the *Index*. May I reply that works of imagination, unless of very serious import, never find a place on the *Index*?" Now, although Dr. Walsh has not said so, I entertain a strong suspicion that in stating his reason for not having my "paper" placed on the *Index* he means to be a bit humorous, and giving him due credit for the very best intentions in that direction, let us proceed with our discussion and ask him to be good enough to explain exactly what he means by the words "unless of very serious import." I confess I do not quite understand him. Perhaps he intends to convey the idea that his Church has taken the moral welfare of her children so much to heart that she has placed a censorship on all impure and corrupting literature. And yet that can hardly be so, because he must be aware that the very worst books of fiction have entirely escaped her notice, while some of the classics, as, for example, "*Les Misérables*," by Victor Hugo, are to be found on the most recent edition of the *Index*;⁶⁰ and when it comes to books on scientific subjects, nothing seems ever to have escaped her. Even the works of Albertus Magnus, the great thirteenth century scientist whom Dr. Walsh delights in citing as a product of Roman Catholicism, were placed there on November 24th, 1665, where they still remain.⁶¹ Then again, for example, in the same edition of the *Index* we find the name of "John William Draper," whom Dr. Walsh, in his "*Popes and Science*," calls "our own Professor Draper."⁶² So that upon moral grounds, at least, the phrase "unless of very serious import" can hardly be accounted for. The explanation must be sought elsewhere. I wonder if Dr. Walsh can possibly mean by it that his Church cares nothing about the character of the literature that may happen to fall into the hands of the faithful, be it good or bad, moral or immoral, pure or impure, so long as it does not in anywise criticise her? Will Dr. Walsh kindly explain the meaning, when used in this connection, of the words "unless of very serious import"?

We come now to the examination of a question raised by Dr. Walsh which, though so puerile as to be unworthy the thought of any serious-minded man, serves so well to illustrate the unreliability of his statements and the manner in which those who "love their enemies," when the mirror of truth is held up to them,

⁶⁰ *Index Librorum Prohibitorum*, etc., 1904.

⁶¹ *Idem*, *Index Librorum Prohibitorum*, etc., 1904.

⁶² Walsh, "*Popes and Science*," p. 284. 1904.

resort to the meanest arts of subterfuge, that I am tempted to devote a few words to its consideration. I refer to Dr. Walsh's slanderous attack on the scientific reputation of one of the world's greatest biologists, Professor Ernst Haeckel. In my reply to Dr. Walsh ⁶³ I quoted from Haeckel's "Riddle of the Universe" ⁶⁴ as follows:

"It is the despotism of the papacy that lent its darkest character to the Middle Ages; it meant death to all freedom of mental life, decay to all science, corruption to all morality. . . . One of the most interesting of the historical facts, which clearly prove the evil of the ultramontane despotism, is its vigorous attack and consistent struggle with science. . . . The success of the papacy in its conflict with independent scientific thought and inquiry is best seen in the distressing condition of science and its literature during the Middle Ages. Not only were the rich literary treasures that classical antiquity had bequeathed to the world destroyed for the most part, or withdrawn from circulation, but the rack and the stake insured the silence of every heretic—that is, every independent thinker. If he did not keep his thoughts to himself he had to look forward to being burned alive, as was the fate of the great monistic philosopher, Giordano Bruno, the reformer, John Huss, and more than a hundred thousand other 'witnesses to the truth.' The history of science in the Middle Ages teaches us on every page that independent thought and empirical research were completely buried for twelve sad centuries under the oppression of the omnipotent papacy. . . . Instead of Christian charity, it introduced a fanatical hatred of the followers of all other religions; with fire and sword it pursued, not only the heathen, but every Christian sect that dared resist the imposition of ultramontane dogma. Tribunals for heretics were erected all over Europe, yielding unnumbered victims, whose torments seemed only to fill their persecutors, with all their Christian charity, with a peculiar satisfaction. The power of Rome was directed mercilessly for centuries against everything that stood in its way. Under the notorious Torquemada (1481-98), in Spain, alone, eight thousand heretics were burned alive and ninety thousand punished with the confiscation of their goods and the most grievous ecclesiastical fines; in the Netherlands, under the rule of Charles V, at least fifty thousand men fell victims to the clerical bloodthirst. And while the heavens resounded with the cry of martyrs, the wealth of half the world was pouring into Rome, to which the whole of Christianity paid tribute, and the self-styled representatives of God on earth and their accomplices (not infrequently Atheists themselves) wallowed in pleasure and vice of every description. 'And all these privileges,' said the frivolous, syphilitic Pope Leo X, 'have been secured to us by the fable of Jesus Christ.'"

To which Dr. Walsh replies:

"In his defense, Dr. Cruikshank quotes Professor Ernst Haeckel. Now, an opinion from Professor Haeckel on a scientific subject is usually worth little enough. Professor His once showed that in order to make the embryos of the dog, the monkey and man look more alike for his scientific (?) purposes Haeckel prepared them for the press by taking the picture of one of them and then modifying it to suit the needs of his argument. Haeckel has long been discredited among German scientists. Virchow considered him a disgrace to German science. It is easy to see then how much his opinion is worth on a disputed historical question."

Now, I submit that this attempted reply is quite characteristic in its evasiveness. Finding himself confronted and hemmed in

⁶³*Med. Lib. & Hist. Jour.*, March, 1906, pp. 82-83.

⁶⁴P. 314.

by an array of facts which he realizes cannot be met by Jesuitical sophistry, Dr. Walsh evidently hopes to mislead his readers by the vigorous use of another of the Church's time-honored controversial methods, vilification. The question here, it will be seen, is not what Professor Haeckel did or did not do with some pictures of embryos; not what Virchow "considered him"; nor whether Professor Haeckel "has been discredited among German scientists." The question is this: Is Professor Haeckel telling the truth about the Church? If, in the opinion of Dr. Walsh, Haeckel's assertions are false, why did he not in his answer, instead of having recourse to circumlocution, slander and abuse, point with unerring aim to the falsity of these assertions, at the same time submitting to the world the proofs of his contention? "The Riddle of the Universe," the book from which I have quoted, has been printed in fourteen different languages and has been distributed all over the world; hundreds of thousands of copies of it have been sold. If Dr. Walsh can prove that the statements contained in it which reflect on his Church are false he will become her greatest benefactor, thus receiving the plaudits of millions of the orthodox, besides meriting the thanks of the historian and the scientist, including the gratitude of Professor Haeckel himself. Why, then, does Professor Walsh put aside this crown of glory? Does not the answer lie in the fact that he knows the evidence to be such that those statements cannot successfully be refuted? Can there be any other reason? Would this papal representative who has evidently been selected by the Jesuits to perform in this country a certain literary function, for any other reason than that which is here ascribed, miss such a golden opportunity? But for the purpose of further demonstrating the unreliability and absurdity of some of his assertions I shall separately consider as briefly as possible Dr. Walsh's slanderous utterances.

First, as to the old slander of Professor Haeckel, which originated in the first attempt to popularize his "History of Creation," in 1868, Dr. Walsh in revamping it says, "Professor His once showed that in order to make the embryos of the dog, the monkey and man look more alike for his scientific (?) purposes, Haeckel prepared them for the press by taking the picture of one of them and modifying it to suit the needs of his argument." This is not only misleading and malicious, but foolish, for the reason that Professor Haeckel, even if so inclined, had no

need to resort to such measures to prove that, at certain stages of development, the embryo of the "dog, the monkey and man" closely resemble each other, because that truth was scientifically established by that great master in embryological research, Carl Ernst Von Baer, in 1827, — seven years before Haeckel was born.⁶⁵

The next of Dr. Walsh's aspersions upon Hæckel is this: "Virchow considered him a disgrace to German science." Now, I submit that Dr. Walsh has produced no evidence in support of his assertion and that psychology, unfortunately, provides no way of knowing what "Virchow considered." But we know that, in 1877, "he was received into the bosom of orthodoxy and respectability while Haeckel remained an outcast"; and it is not inconceivable that great solicitude for the safety of Haeckel's soul might have induced his old teacher, in accordance with orthodox principles, to resort to just such a method of saving it as Dr. Walsh attributed to him. Of course, for the present, this matter must remain unsettled, but it is interesting, in this connection, to note the opinions, actually expressed, by Haeckel, Darwin, Huxley, Bölsche, and other eminent scientists, concerning Virchow, for it will then appear, that it was he who disgraced German science. Haeckel tells us repeatedly, in no uncertain words, even at late as 1905,⁶⁶ that Virchow the Berlin politician was not the great scientist—the old Virchow of Würzburg. Most reluctantly, with a pathos born of the deepest veneration and love for his old master, Haeckel, in the interest of truth, finds himself compelled to say of Virchow, that twenty years of active political life at the German capital had thoroughly transformed him. As evidence of this, among other things, he says, that at the fiftieth meeting of German naturalists and physicians, held at Munich, in September, 1877, replying to a paper entitled "The Modern Doctrine of Evolution, in Its Relation to General Science," which he himself, on the 19th of that month, had read, Virchow, on the 22d, in Haeckel's absence, delivered an address entitled, "Freedom of Science in the Modern State," in which, through ignorance of certain branches of biology, and for diplomatic and political reasons, he repudiated the doctrine of evolution, making such a disgraceful compromise with the Church, and otherwise stultifying himself as a scientist, that Darwin, "generally so gentle in his judgment," on reading the English

⁶⁵ See His, Kolliker, Ecker, or almost any illustrated work on embryology.

⁶⁶ Haeckel, "Last Words on Evolution," pp. 86-87.

translation of the address, said, "Virchow's conduct is shameful and I hope some day he will feel the shame of it." Whether upon this occasion Virchow actually recanted, there seems to be some difference of opinion, but, however that may be, Christian orthodoxy eagerly turned his dualistic utterances to account, and from this time, 1877, until his death, which occurred twenty-five years later, the great founder of cellular pathology, he who as monist, typical free-thinker," "materialist," had been roundly abused by the Church, was patronized by her, and he diplomatically threw the heavy weight of his scientific reputation with her, in opposing the teachings of Darwin and Haeckel, which he had formerly insisted upon, thus for many years impeding, in Germany, the advancement of the theory of evolution.⁶⁷

Then Dr. Walsh tells us that "Haeckel has long been discredited among German scientists." Here again, we are compelled to ask Dr. Walsh to be a trifle more explicit, and tell us whom he means by "German scientists." He cannot mean the men who occupy the chairs of biology in the universities, for, as Professor Bölsche says, "the best of the younger men that fill the biological positions in Germany to-day (and many others) were educated under Haeckel."⁶⁸ Whom, then, does Dr. Walsh mean by "German scientists"? Does he mean such "ecclesiastic evolutionists" as Fathers Wasmann, Cathrein, Braun, Besmer, Cornet, Linsmeier, and Muckermann, "whose ambiguous, 'Jesuitical science' is aptly dealt with by R. H. Francé,"⁶⁹ and of whom Haeckel says: "The vast power of this most dangerous religious congregation consists precisely in its device of accepting one part of science in order to destroy the other part more effectually with it. Their masterly art of sophistry and their equivocal "probabilism," their mendacious "*reservatio mentalis*," the principle that the higher aim sanctifies the worst means, the pernicious casuistry of Ligori and Gury, the cynicism with which they turn the holiest principles to the gratification of their ambition, have impressed on the Jesuits that black character that Carl Hoensbroech has so well exposed recently."⁷⁰ Is this the science and are these the scientists who have discredited Haeckel? Was Professor Haeckel discredited? Let us consider this for a mo-

⁶⁷ See T. H. Huxley and Ernst Haeckel, in the latter's "Freedom in Science and Teaching;" also, "Last Words on Evolution," by Haeckel; also, Haeckel, *His Life and Work*, by Bölsche, p. 74-76.

⁶⁸ "Life of Haeckel," by Bölsche, p. 285.

⁶⁹ *Freie Wort*, No. 22, Feb. 16, 1904. Frankfurt.

⁷⁰ "Last Words on Evolution," Haeckel, pp. 113-116.

ment. Haeckel was graduated from Würzburg in 1857, under Kölliker, Leydig, Virchow, Gegenbauer. Later he studied comparative anatomy under Johannes Müller, at Berlin. Except for one year, devoted to the practice of medicine, he has given his whole life to biological science. He taught for eighty-eight terms at the University of Jena. He declined a chair at Würzburg in 1865 and at Vienna in 1871. He has written forty-one scientific works, besides many contributions to scientific journals. Professor Huxley said of his "Generelle Morphologie," "It is one of the greatest scientific books ever published"; and Darwin declared of his "Natural History of Creation": "Had I read it earlier, the 'Descent of Man' would probably never have been written." Of his "Systematic Phylogeny," Professor Arnold Lang says: "We must stand before this work in astonishment and admiration: astonishment at the vast range of his knowledge—it would seem that one head could contain no more: admiration of the intellectual labor with which the various phenomena are connected and the gigantic mass of material is reduced to order." This is the work for which the Royal Academy of Science at Turin awarded Haeckel the Bressa prize of ten thousand lire, having adjudged it the best that had been published in the last four years of the nineteenth century." When the English government came to publish the result of the Challenger Expedition, Haeckel was entrusted with the work on the Siphonophores, the corneous sponges, and all the radiolaria in the collection. When he began his task, 810 species of radiolaria were known to science. When he came to his provisional conclusion, ten years afterward, though his material was not yet exhausted, there were 4,318 species and 739 genera." In 1898, in answer to an invitation from the International Congress of Zoology, meeting in Cambridge, England, Haeckel delivered an address on the "Evolution of Man," which constitutes an excellent epitome of that subject. When, in 1892, this "discredited" German called on Bismarck, to extend to him an invitation to visit Jena, the Iron Chancellor affectionately embraced him; and when "the greatest German since Luther" arrived there, he emphatically declined to ride through the town, "unless Haeckel comes with me in the carriage." Jena, by the way, has named one of its fine thoroughfares "Haeckel Street." Haeckel has received four gold medals for scientific research and seventy diplomas from various universities and scientific bodies in all parts of the world. "When,

in 1881, the Asiatic Society of Bengal resolved to nominate 'six special centenary honorary members,' he was the one chosen for Germany." On his sixtieth birthday, scientists united to do him honor. He received over one thousand congratulatory letters and telegrams, and "scores of journals awoke the interest of Germany." The elite of the scientific world sent their greetings to the man "who has unselfishly devoted his life to science and to truth, who has opened new paths, and inaugurated fresh knowledge, wherever he has turned, and who has given his best for the welfare of humanity." A marble bust of Haeckel was then unveiled. Those contributing to the event included five hundred university professors and heads of academic institutions in all parts of the world, "from Brazil and the States, to Algiers, Egypt and India." In their name, Professor Hartwig greeted Haeckel as one "Who has written his name in letters of light in the history of science." The Italians, through their Minister of Public Instruction, telegraphed the following: "Italy that you love so much takes cordial part in all the honors that the civilized nations of the earth are heaping on you. In the name of the Italian universities which love you so much and so admire your undying work I send you a heartfelt greeting and wishes for a long and happy and active career." Dr. Paul Von Ritter, on this occasion, gave 75,000 marks for the erection of a monument to Haeckel at Jena, "when the hour comes." He had previously given 300,000 marks to be spent in the furtherance of Haeckel's scientific views. To avoid the possibility of further public demonstration, and for rest and quiet, Professor Haeckel spent his seventieth birthday with his family, at Rapolla, in Italy. But his whereabouts becoming known, he was deluged with telegrams, letters, flowers and gifts, many of them fervent expressions of admiration and gratitude from readers of the "Riddle of the Universe." "A still larger number of letters and gifts reached Jena from all parts of the world. Hundreds of German journals and periodicals devoted long and generous articles to the distinguished worker, and little festive commemorations were held at many universities. Jena sent a deputation, consisting of a number of its professors, to visit Haeckel in person at Rapallo. At Zurich, Professor Conrad Keller and Professor Arnold Land delivered speeches which have since been published."¹ In April, 1905, Professor Haeckel, though aged

¹ "Haeckel: His Life and Work." Boelsche, pp. 314-315.

and in feeble health, at the urgent request of many Berlin admirers, consented to deliver at the "Academy of Music" there, a popular scientific lecture. When the date (April 17th) for his appearance in Berlin was finally decided upon, applications for admission to the lecture became so numerous that it was necessary to arrange for three lectures instead of one. These were delivered April 17th, 18th, and 19th, to crowded assemblages, and they have since been translated and published in English under the title, "Last Words on Evolution." So far from the truth is the assertion, "Haeckel has long been discredited among German scientists," "that his name will rise first to the lips of any informed student in the civilized world, from Yokohama to St. Petersburg, from San Francisco to Calcutta, if you speak of zoology or embryology."

Now, what reliance, may I ask the reader, is to be placed on the statement of any individual who, in the light of these facts, asserts that, Professor Haeckel is discredited in the scientific world?

As a discussion of this kind necessitates the examination not only of much material, but of the source of that material, any contribution to it must appear somewhat discursive; therefore I desire to recall as briefly as possible the facts which I have attempted to set forth in proof of my original assertions.

The first part of my reply ⁷² was concerned principally in showing that Dr. Walsh's exceptions to Dr. White's estimate of the character of Pope John XXII, and of the meaning of his bull *Super illius specula* were not well taken. I think it will be recalled without further review, that the evidence is conclusive that "Pope John XXII was sunk in superstition the most abject and debasing," that the bull *Super illius specula* shows this, and that this bull cannot be considered in harmony with "the most enlightened period of the world's history." It may also be remembered that further evidence as to the character of Pope John did not establish his claim to our admiration or respect.

Incidentally I found it necessary to call attention to Dr. Walsh's method of dealing with historical facts, this and his equivocal position explaining many things otherwise hard to understand.

In concluding my contribution I have dealt with Dr. Walsh's denials of my assertions, of which he says: "There was no statement of Dr. Cruikshank's that had a basis of historical truth."

⁷² AESCULAPIAN, March, 1909.

1. Dr. Walsh denies that the bull *Spodent pariter* issued by John XXII was intended to prevent the study of chemistry, or that it had that effect.

The following are the facts bearing upon this question:

First. In the thirteenth century chemistry was in its initial stage, alchemy; the bull *Spodent pariter* (1317) begins with the words: "Alchemies are forbidden."

Second, In addition, chemistry—or alchemy—was considered a form of magic or sorcery, being known as one of the Seven Devilish Arts; the bull *Super illius specula* (1326) prohibited sorcery. (It may be recalled that Pope John was in mortal fear of sorcerers.)

Third. While the eight historians cited by Dr. Walsh may not mention the particular bulls to which I call attention, there are at least one hundred and fifty who show that papal Christianity seriously retarded the development of chemistry, and many of these show that Pope John XXII contributed largely to that result.

Fourth. A review of the history of the times presents indisputable evidence that the Church opposed all attempts at true scientific investigation, and that it would have been impossible for the bulls mentioned to have had any other effect than that which I have attributed to them.

2. Dr. Walsh attempts to disprove my assertion that the study of chemistry, physics, hygiene, or medicine was forbidden, by saying that before the Reformation over twenty medical schools were founded.

While recognizing the irrelevancy of this reply, I gave it sufficient attention to remind Dr. Walsh that the origin of these schools was to be traced to that wonderful Moorish civilization which the Church so ruthlessly destroyed. (It would seem unnecessary to suggest in this connection that it is hardly in good taste for the destroyer to appropriate the glory of the victim.)

May I recall that it was here—when reviewing the marvellous achievements of the Saracens—that I asked Dr. Walsh to name even *one truth which the Church gave to the world*, and *one that she did not strive to suppress?*

After these digressions, I have dealt with the sciences which I named as forbidden studies; in general, by showing that the Church discouraged all rational science when she associated experimentation with heresy; specifically, as follows:

First. I have cited the cases of men who were persecuted for investigations in light, the indestructibility of matter, etc.; and have mentioned recorded decretals forbidding the study of "physics, or the laws of the world," "natural philosophy," "chemistry."

Second. I have shown that the Church prevented the development of true medicine by teaching that disease was the work of Satan and was to be cured by the intercession of the saints; that it fostered a most unworthy form of fetichism; and I have quoted the Church's prohibitions of surgical operations, use of medical treatises, all participation in medical studies.

Third. I have referred to the matter of anatomy by showing that everything in the condition of the times was calculated to cause just that interpretation which was given to the bull of Boniface VIII forbidding the dissection of dead bodies. (It is interesting to realize what an easy matter it would have been for the Pope to correct a wrong interpretation, and how quickly he would have done so.)

Fourth. I have called attention to the Church's attitude toward hygienic measures by showing that filth was lauded and encouraged, and that she taught that the plague was caused by the wrath of God.

3. Dr. Walsh takes exception to my assertion that to relieve pain was considered to be a thwarting of the will of the Almighty. Here I have cited from medical history authenticated cases of persecution or other opposition because of the use of opium, chloroform, cocaine and quinine.

4. Dr. Walsh denies that the study of astronomy was considered criminal and frequently paid the penalty of imprisonment and death (taking exception especially to the word "frequently.")

In answer I have reviewed briefly the development of both astronomy and geography, and have called attention to specific instances of persecution because of dissent from the Church's teaching in these subjects.

I justified my use of the word "frequently" by reminding Dr. Walsh that of the few men brave enough to dare the enmity of the Church, the number persecuted was a large enough proportion to exonerate her from the charge of negligence.

In addition to thus giving the historical basis of my assertions, I have taken occasion to present evidence in disproof of Dr. Walsh's remarkable statements regarding Professor Haeckel.

As much the greater part of this article is in answer to criti-

cisms of certain statements which were made in my address originally attacked by Dr. Walsh, may I conclude by saying that after a somewhat careful review of the history of the relation of the Roman Church to attempts at scientific progress I now desire to reiterate those statements, as follows:

"It would require volumes to describe the pitiful retrogression of science, culture and morality during the twelve centuries of the spiritual despotism of Rome. Through the cheerless papal night of the Middle Ages—the starless night of bigotry, injustice and superstition, that black night which lasted one thousand years—almost every beam of scientific light was lost to the Christian world. It was during this period of the world's history that chemistry was called and became known as one of the "Seven devilish arts." The chemist was called a miscreant, a sorcerer, and was feared because of his supposed partnership with the devil. He was denounced by pope and priest, and was persecuted to the full extent of papal power.

"Pope John XXII was especially energetic in this direction, and in the year 1317 A. D. issued a bull calling on all rulers, secular and ecclesiastical, to hunt down the miscreants who were afflicting the faithful, and he thereupon increased the powers of the inquisition in various parts of Europe for this purpose. Persecution of so-called magic and witchcraft at this time received a fearful impulse from the very centre of Christendom and tens of thousands of human beings were tortured and destroyed."

"For one thousand years in papal Christendom the study of astronomy was considered criminal, and frequently paid the penalty of imprisonment and death. Geography and geology were not tolerated. To attempt the study of chemistry, physics, hygiene or medicine was to fly directly in the face of the Maker of the Universe, and was therefore forbidden."

"To relieve the pain of the throbbing nerve was thought to thwart the wish of the Almighty. The insane were regarded as possessing devils, and in consequence suffered the agonies and tortures of chain and dungeon."

"Every crime was a virtue and every virtue a crime. The lovers of God were the haters of men. The white forehead of honor wore the brand of shame. Liberty was in chains, intelligence despised, stupidity sainted, hypocrisy crowned, and bending over humanity's prostrate form was superstition's night without a star."

102 Fort Greene Place, Brooklyn, N. Y.

TRANSACTIONS OF THE ST. LOUIS MEDICAL
HISTORY CLUB.

STATED MEETING, APRIL 22, 1909.

The St. Louis Medical History Club met at the Library Building, Thursday evening, April 22 1909. The meeting was called to order at 9.15 P. M. with Dr. F. J. Lutz in the chair. There were present: Drs. J. M. Ball, L. C. Boisliniere, J. Grindon, W. A. Hardaway, G. Hinrichs G. Homan, E. P. Lyon, F. J. Lutz, M. G. Seelig C. D. Stevens and Otto Wall.

Dr. Homan read a postal from Dr. Osler, saying that he would be in America this summer. Dr. Grindon moved that Dr. Homan be appointed a committee to ascertain Dr. Osler's itinerary and the possibility of his coming to St. Louis.

Dr. Grindon moved that Dr. Homan be thanked for the presentation of the picture, "Ancient Human Skull," to the Club. Seconded and carried. Dr. Homan was formally thanked.

Dr. Lutz requested that Prof. E. L. Van Leersum, of the University of Leyden (Professor of Medical History), be made an Honorary Member of the St. Louis Medical History Club. Dr. Homan seconded the request. Motion carried and the Secretary was instructed so to notify Prof. Van Leersum.

Dr. Lutz presented fac simile signatures of the hearers of Boerhaave in 1737.

Dr. Lutz moved that \$10 of the Club's money be sent to the Carroll Memorial Fund. This motion was not carried, but instead, a substitute motion by Dr. Grindon was made and seconded that the Secretary-Treasurer be requested to report at the next meeting upon the finances of the Club.

Dr. Stevens presented some old instruments which he will donate to the Club when a case is furnished.

Program.

Dr. Lutz presented a fifth edition (1716) of Tulpus and read a few notes on his work, particular stress being laid on the various editions of Tulpus' "Observations."

Dr. J. M. Ball exhibited a copy of a pre-Vesalian work entitled, "La Dissection des Parties du Corps Humain," by Charles Estienne, 1546, with numerous plates, and read an account of the work in its two editions, Latin and French. Also

the "Tabulæ Anatomicæ" of Pietro Berrettini, made in 1618, which, after being lost for one hundred years, were published at Rome, 1741. Also Ruben's "Theory of the Human Body," in French, Paris, 1773.

Dr. Ball also read a biographic sketch of Giuseppe Ribera, called "Spagnoletto," an artist noted for his knowledge of anatomy.

Adjourned.

JOSEPH GRINDON, M.D., *Secretary pro tem.*

NOTES AND NEWS.

"Daniel Drake and His Followers" is the title of a volume by Otto Juettner, M.D., of Cincinnati, O., to be published shortly. The publishers announce that this book of about 500 pages will contain an exhaustive and authentic account of the subject indicated in the title, made doubly interesting and valuable by about 200 illustrations. It will be sold by subscription for \$5.00.

* * *

The Library of the College of Physicians of Philadelphia's annual report for 1908 shows the total number of volumes in the library to be 77,603. There are also 9,115 unbound reports and transactions, 22,681 theses and dissertations, and 67,122 unbound pamphlets. During the year there were received 3,015 volumes, 8,366 pamphlets, and 22,218 numbers of various medical periodicals. The number of volumes added to the library was 1,987. Noteworthy among the accessions were thirty-three rare and valuable medical works, of which twenty-one were printed in the 15th century, presented by Dr. William W. Keen and associates. These included copies of Arnoldus de Villa Nova (*ca.* 1473), Hieronimus de Manfredi (1474), Guy de Chauliac (1880), Petrus Aegidius *Carbolensis* (1484), Matheolus *Perusinus* (*ca.* 1484), Joannes de Tornamira (1490), Joannes Mesue (1491), Santes de Manliis de Bosco (1494), Joannes de Ketam (1495), Gualterus Burlaeus (1497), Coradinus (1497), Nicolaus Leoniceus (1497), Avenzohar (1497), Joannes Sermoneta (1498), Dinus del Garbo (1499), Hieronymus Brunschwid (1500), the 1593 (Rome) edition of Avicenna, and the facsimile edition of the *Disscorides* codex. The library will be moved into the new building, now nearing completion, at an early date.

* * *

W. B. Saunders and Co., of 925 Walnut Street, Philadelphia, Pa., have recently issued an eighty-page illustrated, cloth-bound catalog of their medical publications. The large number of books issued by this house makes this catalog useful as a bibliographical index and justifies its inclusion in the public as well as in the individual medical library.

THE ÆSCULAPIAN

A QUARTERLY JOURNAL OF MEDICAL
HISTORY, LITERATURE, AND ART

EDITED BY

ALBERT TRACY HUNTINGTON

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June-September, 1909

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EDITORIAL.

A LITERARY CONTROVERSY.



FOR some time past there has been waged in this journal a literary controversy between Dr. James J. Walsh, Professor of the History of Medicine at Fordham University Medical School, and Dr. William J. Cruikshank, a Brooklyn practitioner. It will be recollected by our readers that the basis of this controversy over historical truth was the publication of an introductory address entitled, "Some Relations of the Church and Scientific Progress," by Dr. Cruikshank¹ in which he set forth in more or less flowery verbiage the generally accepted view that in times past the maternal Church (both Catholic and Protestant) had laid a chastening hand upon the person of youthful Science. Sharing to some extent this general opinion the editor prefixed the following note to Dr. Cruikshank's initial contribution:

"With the consent of the author, the title of the following address has been prefixed by the editor as being more indicative of the subject matter treated than the mere words 'Introductory Address.' It was in this latter form, however, that this 'introductory address' was delivered, without thought of its subsequent publication. It served to introduce Dr. Joseph L. Mayer who delivered an address on 'The Chemistry of Ventilation,' before the members of St. Peter's League, a society connected with St. Peter's Protestant Episcopal Church, of Brooklyn, N. Y.

¹ *Med. Lib. & Hist. Jour.*, 1905, iii, July, pp. 184-188.

"In addition to the intrinsic value of Dr. Cruikshank's remarks, the Editor has considered it of no slight interest, from an historical view-point, that such an address delivered within the walls of a church and to an audience of churchmen was received favorably when for centuries past the attitude of the Church toward scientific progress and the disclosure of scientific truth has been one of marked aloofness—not to say antagonism."

Exception was immediately taken to the publication of Dr. Cruikshank's address and to the editorial note above quoted, by a subscriber, who stated that it was "unpleasant to find the journal made the medium for spreading before a wider audience statements so entirely unsupported by evidence." The correspondence between this subscriber and the editor was published,² in which the latter stated that "If divergence of opinion exists in the minds of the journal's readers and contributors, its pages are always open with fairness, equity and impartiality to all. In general, the journal welcomes controversy, not for controversy's sake, but in order that all sides of a disputed question may be presented, discussed, weighed, and the ultimate truth prevail." The subscriber expressed his conviction "that nothing but fairness characterizes your attitude to your readers through the journal," and we trust we have maintained this impartial position throughout the controversy which has followed.

A new *Ivanhoe* entered the lists in the person of Dr. James J. Walsh, who in his "Pope John XXII and the Supposed Bull Forbidding Chemistry,"³ undertook to prove that Dr. Cruikshank's statements were mostly false and inaccurate, particularly in reference to Pope John XXII and his supposed bull forbidding chemistry.

In rebuttal to Dr. Walsh's attack upon his first contribution, Dr. Cruikshank, reinforced by the Hon. Andrew D. White, offered in return his "The Antagonism of the Church to Scientific Progress During the Middle Ages: The Facts of the Case, and a Reply to the Criticism of Dr. James J. Walsh." In this article Dr. White,⁴ in a letter to Dr. Cruikshank, stated:

"True, I differ with you somewhat in my estimate of the general influence of the Church and its theology in the Middle Ages. An organization which produced the medieval cathedrals and the scholastic philosophy, superseded though the latter may now have become, was certainly not deficient in strong men and in earnest thought. But, while thus differing with you, I reiterate my conviction that your statements of fact, as regards the influence of dogmatic theology in science, and based on sound historical authority, Catholic as well as Protestant, and, what is better, upon documentary evidence, impossible to gainsay. . . .

² *Ibid.*, 1905, iii, Oct., pp. 296-299.

³ *Ibidem*, pp. 248-263.

⁴ *Ibid.*, 1906, iv, March, pp. 56-85.

"What is needed in the discussion of this subject is the clean and clear presentation of the truth, from really authoritative sources. It is of no avail to pettifog the questions at issue. The interests of theology, as well as of science, demand not evasions or apologetics, but a lucid and straight-forward showing of the mistakes of the past, in order that they may be avoided in the future."

Undaunted, Dr. Walsh again took up the cudgels and in his "The Supposed Warfare Between Medical Science and Theology,"⁵ turned his lance particularly against Dr. Andrew D. White and his well-known "History of the Warfare of Science with Theology in Christendom."

To this renewed criticism Dr. Cruikshank made his "A Reply to Dr. Walsh's 'The Supposed Warfare Between Medical Science and Theology,'"⁶ which is concluded in the present issue of the journal.⁷

In all, we have devoted one hundred and eighty-nine pages of the journal to the discussion of this one phase of medical history. Actuated by a serious purpose and a high ideal in the publication of this journal the editor pauses to consider, in granting so much space, Has it been "worth while?" Literary polemics, between able contestants, is generally entertaining reading, but that is not the only point to be considered. Has an historical error been corrected? Has historical truth been advanced?

Dr. Walsh states that "in this discussion there are just two questions that are of interest to students of medical history. These two questions are: Did the Popes forbid dissection, or was some papal decree falsely interpreted, so as to be considered to prohibit dissection? and, Did the Popes forbid chemistry or the science that preceded chemistry, or was some papal decree taken to mean that the investigation of chemical or alchemical problems, was forbidden." He cites the papal bulls which, in the light of to-day's reading, do not in so many words make these specific prohibitions. He would have it appear that throughout the Middle Ages the attitude of the Church towards scientific and intellectual development was that of a kindly fostering mother.

On the other hand, Dr. Cruikshank is not content to have the mere texts of the bulls decide the argument. He maintains that the bulls should be considered in connection with their proper environment and the times in which they were written.

⁵ *Ibid.*, 1906, iv, Sept., 263-286.

⁶ *AESCULAPIAN*, 1909, i, March, pp. 88.

⁷ Pages 201-271.

By documentary and other evidence he endeavors to prove that his contention that the Church (and he makes no distinction between the Protestant and the Roman Church) has antagonized scientific progress is a matter of historical truth.

In this controversy the editor has striven to maintain an attitude of strict impartiality. Though his blue pencil has been used it has been merely to curtail much that he considered only remotely relevant to the points at issue. We are of the opinion that ample space has been given for the discussion of this subject and can conceive of but little more that could be considered as new evidence or argument, or, in fact, as of much of anything other than reiteration and controversy prolonged by mere love of rhetoric.

THE DOUBLE NUMBER.

The editor regrets the length of time that has elapsed since the publication of the previous number of *THE ÆSCULAPIAN*. That issue contained the first instalment of Dr. Cruikshank's article, the conclusion of which at that time was in process of writing. It was not until October 20, 1909, that the promised manuscript was placed in the editor's hands and some time elapsed before he was able to give it his attention. Owing to pressure of other demands upon his time delay has succeeded delay until it has seemed advisable to present the whole continuation of Dr. Cruikshank's article in one instalment. The length of this has necessitated the issuing of a double number which completes Volume I.

The first number of the new volume (Vol. II.) is in press and will be mailed to subscribers shortly.

NOTES AND NEWS.

Buchhandlung Gustav Fock (Schlossgasse 7-9, Leipzig, Germany) have just published their "Antiquariats-Katalog No. 336," of 160 pages, listing nearly 3,500 lots of second-hand medical books dealing with the history of medicine and pharmacy, bibliography, antiquities, curiosities, periodicals, and dissertations. The catalog will be sent free on request.

* * *

Ludwig Rosenthal (14, Hildegardstrasse, München, Germany) has recently sent out four catalogs of interest to the medical librarian and bibliophile. "Katalog 122" is devoted to "The History of Medicine from the Earliest Times to the End of the 18th Century" and lists some 3,000

lots; over 500 separate titles are included in his "Katalog 127," entitled "Bibliotheca Balneologica et Hydrotherapeutica, Vetus et Nova: Bäder-schriften"; "Katalog 128" is entitled "Die Medizinische Wissenschaft, 1800-1900" and contains nearly 2,000 items; and "Katalog 129," entitled "Aerzte Portraits, Autographen, Karikaturen, Sticke. Alte und neue Medizin. Neueste Ewerbungen," lists over 1,000 separate items. The prices in many instances, are very reasonable.

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